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CRAWFORD SLIP METHOD HOW TO MOBILIZE BRAINPOWER BY
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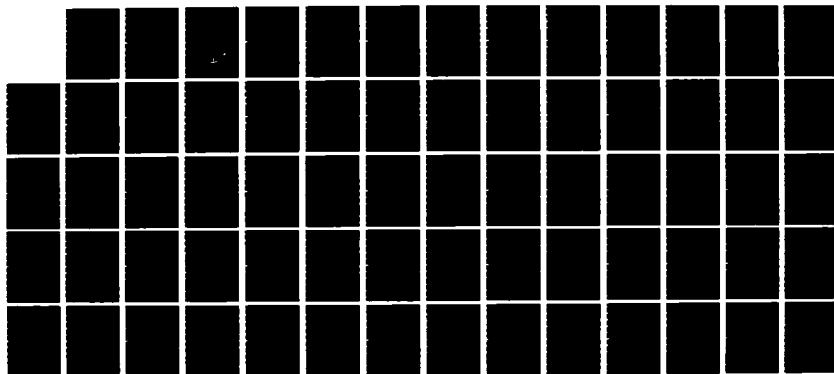
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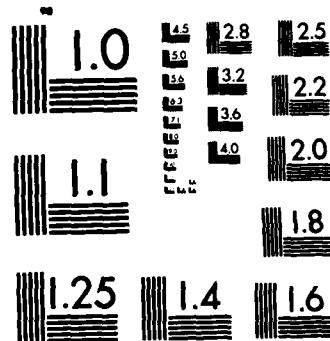
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CRAWFORD SLIP METHOD

How to Mobilize Brainpower by Think Tank Technology

By

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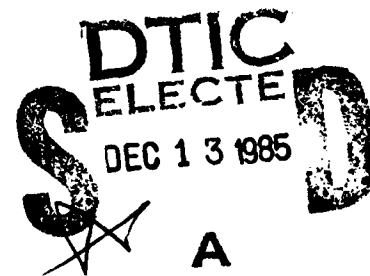
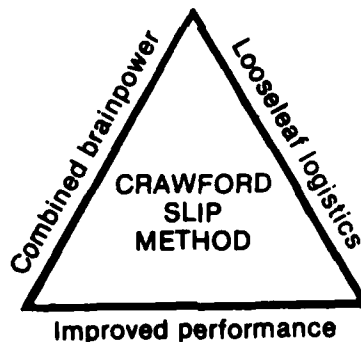
Air Force Institute of Technology

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THINK TANK TEAMS AT USC AND AFIT

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January 1983

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University of Southern California

University Park MC 0041

Los Angeles, California 90089-0041

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CRAWFORD SLIP METHOD QUESTIONS, ANSWERS

Short answers by Crawford to shortened questions submitted by workshop groups

- 1 HOW DID IT ALL BEGIN? In 1925 I had a drawer full of notes I could not organize. I had slips cut, copied notes to slips, dictated my first book.
- 2 WHAT IS THE GOAL? To improve the activity you are analyzing by slips.
- 3 WHAT ARE ITS KEY POINTS? a) Performance focus. b) Labor saving.
- 4 WHAT ARE KEY ADVANTAGES? More inputs, easier to organize, better outputs.
- 5 CAN BIAS SPOIL SOLUTIONS? Slips are raw materials, not ballots. Treat as true or false. You take professional responsibility.
- 6 HOW CAN IT HELP MANAGERS? By penetrating better into what they manage.
- 7 WHAT KINDS OF TARGETS ARE BEST? Single, simple, specific, free-response.
- 8 HOW MANY TARGETS PER WORKSHOP? About one per ten minutes of writing time.
- 9 WHY NOT DISCUSS INSTEAD OF WRITE? Fear and oral bottleneck inhibit and slow down inputs. Those expressed are hard to collect and organize.
- 10 WHAT FOLLOWS COLLECTING SLIPS? Classify, organize, recommend, implement.
- 11 IS CLASSIFYING DONE BY ONE? Usually, but "any number can play" if directed.
- 12 HOW DO YOU CLASSIFY SLIPS? Make kindred piles, assign index terms, position piles alphabetically as indexed, until all slips are in piles.
- 13 CAN IT BE DONE IN SMALL GROUPS? The smallest is ONE. I do much of this.
- 14 CAN NEW EMPLOYEES WRITE GOOD SLIPS? They may write problems, lack answers.
- 15 HOW CAN YOU REDUCE FEAR TO WRITE? Provide anonymity and privacy of slips.
- 16 IS FEEDBACK REQUIRED? Liked by slip writers, not always feasible.
- 17 IS DELAYED FEEDBACK A HANDICAP? Yes, but often worth waiting for.
- 18 CAN IT PRODUCE TECHNICAL MANUALS? Yes, if qualified persons are involved.
- 19 HOW EDUCATED MUST SLIP WRITERS BE? Fourth grade up. Better if up.
- 20 DOES IT ALWAYS SUCCEED? Like all high technology, it has high risk factors.
- 21 IS IT EASY TO LEARN? Only if you want only a smattering.
- 22 WHAT IS HARD ABOUT IT? Getting slips is easiest, targeting next, processing most difficult of all.
- 23 HOW DO COSTS COMPARE? Infinitesimal if quality is considered.
- 24 WHY WRITE ONLY SHORT SENTENCES? Long ones tend to have two thoughts.
- 25 WHY NOT LARGER SLIPS? They tempt to write paragraphs, defeat looseleaf idea.
- 26 WHY THESE EXACT DIMENSIONS? It is one eighth of letter size with no waste.
- 27 WHY DID I NOT HEAR OF THIS BEFORE? My cancer surgery in 1961 caused a gap until the Air Force involved me in 1979. Momentum built fast after that.



NOTE: The "Crawford Slip Method" book is obtainable from the School of Public Administration, University of Southern California, Los Angeles, CA 90089-0041. Tele: (213) 743-7152. List price per copy is \$3.00 plus 6½% sales tax. For orders of 10 or more the discount is 20%.

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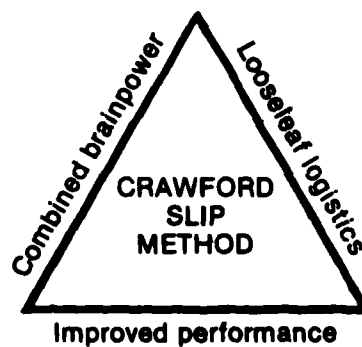
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January 1983

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FOREWORD BY T. ROSS CLAYTON, Ph.D.
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This monograph introduces the reader to the slip method pioneered by Dr. C.C. Crawford, presented in a succinct and readable yet comprehensive manner. A thoughtful perusal of the monograph will quickly lead to a realization of the multiple possibilities of this management technology.

The Crawford slip method is a tool for use by managerial craftsmen; managers who take pride in their repertoire of relevant tools will certainly want to add this method to their tool bags. There will be many occasions when this tool is the right one for use in their organizations.

Educators and training professionals who engage in development of managers will find the Crawford slip method a valuable addition to their curricula. The slip method can readily be taught in courses on management analysis, administrative management, and managerial research methods, and in applied behavioral science courses which address managerial problem solving.

Consultants who aid managers with their organizational problems will also find this method of considerable value.

Few management technologies in use today have the potential that is inherent in the slip method as an instrument for orchestration of the knowledge which exists in the minds of organizational members. The method can help managers achieve increased organizational effectiveness and efficiency. The method's emphasis upon "targets" helps to identify and clarify specific problems to be solved. Having knowledgeable individuals write "How to" questions on slips of paper economically obtains their insights into particular obstacles or barriers to goal achievement. By focusing on possible solutions to overcome these obstacles and barriers, the method effectively gleans the creative thoughts of participants in a format carefully designed for subsequent classification and analysis; it has all the advantages associated with Osborn's "Brainstorming" plus those that flow from use of a rigorous format for classification and analysis of the written thoughts that are generated.

I urge each reader to read this monograph carefully; the implications of this technology are quite profound for those who invest of themselves sufficiently to comprehend how the slip method can be of use in their own activities.

PREFACE BY C.C. CRAWFORD

The Crawford slip method involves two main principles: a) The FUNCTIONAL or BEHAVIORAL approach to improved performance. b) The LOOSELEAF (one-sentence-per-slip) technology for assembling and organizing ideas. Of the two, the first is by far the more important. With its HOW TO emphasis you can mobilize many minds in a search for better ways. Attention is on difficulties, troubles, or deficiencies, and on remedial insights matched to them. Materials which you produce are then DIRECTIVE, not merely descriptive.

The looseleaf feature is badly needed. It is nearly impossible to merge ideas from many sheets or conversations into a good configuration without it. Imagine a bricklayer working without SINGLE bricks! Much of our substandard training material or management plans results from combining ASSEMBLES. Putting each idea on a separate slip helps you to fit each better into the total mosaic.

The Crawford slip method is far better than when Dr. Demidovich called me in 1979. We have refined it as we applied it in a few hundred situations. I learned much from those tens of thousands of slips. Dr. Charles R. Fenno, Professor of Technical Communications, AFIT, has rendered a major service by his sharp eye and editorial dedication in checking most of the manuscript.

Now we need collaborators. Won't you join us? And don't settle for a mere smattering, even if it does help you a little. There is more involved than meets the eye at first glance.

The book is not copyrighted. Duplicate and use it and improve it in any ways you can. Our nation needs a much better think tank technology than we are now using. Please help us to develop it, starting here.

PREFACE BY JOHN W. DEMIDOVICH

Robert Townsend, author of "Up the Organization," suggests that every organization should appoint a vice president in charge of killing things. Many activities, customs, norms, regulations, and procedures that once were appropriate and needed are still carried forward long after the need is past, simply out of habit or tradition. Our book was conceived to stimulate new lines of thinking and research on human effectiveness. The Crawford slip method helps to release and encourage the ability of human beings to think creatively.

The technique described here is equally useful in helping you to get from "How things are" to "How they might be." A diagnosis is required periodically to determine why an organization is in the state it is. A leader must decide whether some aspect of the organization is in a good state or a bad state. What actions should be taken to improve it? The Crawford slip method stimulates input from many levels. It has been my experience that people from all walks of life have ideas to improve a task, operation, or organization.

It has been estimated that there are about eleven million meetings during any working day in the U.S. Their results are often disappointing, in part because we depend too heavily on oral communications. The Crawford slip method gives us a better way.

The writing of this book has been a four-year journey with Dr. Crawford, whose technique forms the nucleus of the method. But, as he has said elsewhere, the ideas you will find discussed here have been enlarged and enriched by hundreds of people who gave us their creativity during workshops and seminars using the Crawford slip method. In a very real sense, the content of these pages confirms that the method works and works well. In addition, I am indebted to Charles H. Clark, author of "Brainstorming," both for introducing me to Dr. Crawford and for promoting creative problem solving.

CHAPTER 1. THINK TANK GOALS FOR WHAT PURPOSES TO MOBILIZE IDEAS ON SLIPS

The Crawford slip method is a systems analysis tool for many uses. Its basic role is to IMPROVE some useful activity in which you are involved. Its range of possible application is very broad. Let's look at some typical ones.

1. Activities that need improving. YOUR purposes in using the Crawford slip method will be to improve something for which YOU are responsible. This may be in work or management. It may relate to your job, family, religion, personal life, recreation, or civic affairs. You might use the Crawford slip method to improve an aircraft factory, a senior center, a hospital rehabilitation program, or an automobile dealership. You might use it to improve the morale of engineers, training of purchasing agents, or writing a speech or thesis. Or you might want to improve the design or production of some new product, such as a washing machine or home computer. Some of YOUR needs may be quite unique, unlike those of anyone else. They are open for a great deal of creativity. Even a small think tank might greatly extend your creative reach.

2. Situations where the method works best. Think tank effort should be applied selectively. Some activities especially need think tank attention. The need increases with organizational size, technological complexity, and interdependence. Are you in a BIG organization? Is your activity a high-technology one? Are there many MOVING PARTS that must mesh or interact in ultra-precise ways? Are many different persons, disciplines, specialties, or jurisdictions interlocked in mutually dependent roles? The more things or people involved, the greater the need for better ways to coordinate and streamline them.

There are likely to be far more intellectual components in the total operation than there are physical parts in the hardware involved in the activity. The Crawford slip method is one tool for better assembly of those mental parts. It is far more than mere looseleaf gadgetry. It is a high-technology intellectual or editorial assembly line. It is a system for comprehensive and purposeful mobilization of far more ideas than a lone thinker can dream up.

In some situations your needs may be more urgent than complex. How soon MUST a right decision be made? How much is at stake? How great is the price of a wrong decision about a fairly simple issue? How dependable is your own unaided judgment about the pros and cons? Such decisions may combine some coldly rational factors with some more subjective intuitions or even red hot emotions. How safe is it for you to risk possible disaster by relying on your unaided analysis?

3. Reduction of unknowns as a think tank goal. Do you ever feel all alone or overwhelmed as you decide big issues in the face of too many unknowns? Somebody else may be expert in what is unknown to you. Different people may each know some fraction of what you need for your problem. The think tank principle combines these fractions. It can add hundreds or thousands of insights that are now carried in separate brains. As a lone thinker you may risk a dangerous leap in the dark. Use those other brains.

4. Need for diagnosis. A typical starting point is a diagnostic analysis. In many situations the think tank can "X-ray the patient" and reveal the trouble spots in activities which are "opaque" to you. Call this a

DIFFICULTY ANALYSIS. It involves identifying the troubles, difficulties, deficiencies, obstacles, or imperfections in the activity that is to be improved. You can't possibly be aware of all of these. A group of people can supply perceptions from different vantage points. Their combined inputs can give you a much better grasp of what is wrong. Pinpointing the perceived troubles is the first step toward more precise analyses of possible remedies.

5. Need for remedial analysis. Identifying the troubles is a long step toward finding remedies. We need better and more rapid ways to find those remedies. Those closest to the troubles are often keenly aware of needed remedies. Managers or generalists can often benefit from workers' remedial suggestions. These suggestions are often hard to get because of fear to speak out and risk criticism or reprisal. The Crawford slip method is not only a RAPID way to collect remedial options. It can get these SAFELY and INDEPENDENTLY. Later chapters spell out how this is done.

6. Need for PENETRATION into new situations or problems. The think tank can help you especially when you get a new assignment. As a "new-broom person" you may be unable to sweep at all until you scout your floor space. Present personnel can give you some much needed briefings if they can do it safely. Your being new allows you to ask for these briefings without loss of face. The Crawford slip method can give you tremendous help in a single workshop session with those willing and able helpers. This book tells more about how.

7. Think tanks for training programs. Better training is often the key to improving an activity. But who needs to learn how to do what? The diagnosis of troubles, errors, and deficiencies is an ideal identification of training needs. The remedial analyses can supply training content. The looseleaf feature of the Crawford slip method makes organization and manual writing much easier. Involvement of those affected, whether trainees, managers, or interfacing colleagues, helps with implementation. The method originated as a tool for TRAINING. Even when used to improve management, it often involves training of people who create management problems, in addition to training managers themselves.

8. Need for ORGANIZATION of ideas. The organization of thought is a major weak spot in our society. This widespread weakness exists in many disciplines or lines of effort. There are simply more mental parts to manage than our workers or managers can systematize. A vast number of activities need a SYSTEM equivalent to what accounting and computers are doing for a few well-developed functions. Between mere "instant wisdom" and sophisticated computers lies a vast body of pre-computer qualitative thinking that is done very crudely. It often resembles blind plucking of solutions out of a grab bag of miscellaneous options. Bits and fragments of this miscellany may get organized on sheets of paper. But merging 100 such sheets of paper into one systematic configuration is extremely difficult. It was this difficulty of merging sheets of notes for his first book that led Crawford to invent the Crawford slip method. Reducing those notes to looseleaf slips, one sentence per slip, made the book easy to organize and write.

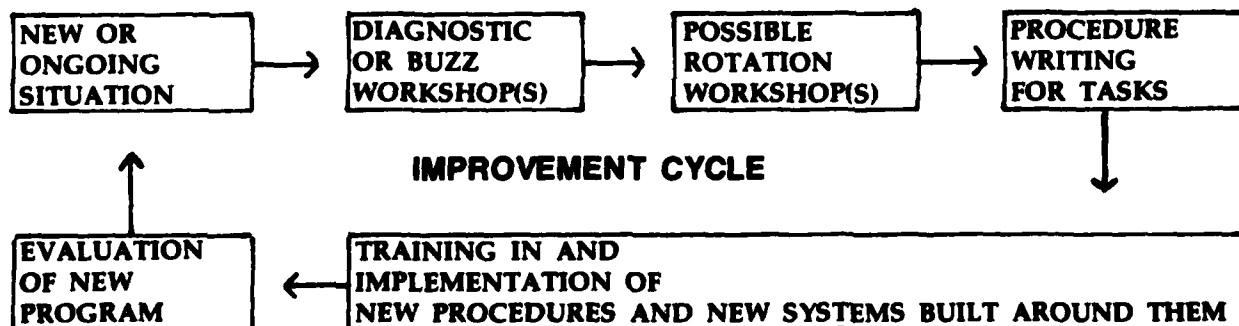
9. Summary. The essence of what this book is all about is: a) You collect slip information from a variety of people. b) You classify it into meaningful configurations. c) You make it available to wider audiences.

Learning activities for Chapter 1

- a Write down several problems, projects, or improvement programs to which you might apply the Crawford slip method
- b Select at least one of the above on which to focus as you learn the method
- c Get the above checked by an instructor or others



BRAINPOWER MOBILIZATION



CHAPTER 2. MENTAL LOW GEAR

HOW TO MOBILIZE YOUR OWN BRAINPOWER

Use the Crawford slip method on your own problems before you try it with others. You have much more brainpower than you are probably using. This chapter tells how to use more.

A. FORMAT OF SLIPS

How to facilitate later use of your slips

Until you can put your own thoughts into a manageable slip format, you are not ready to direct a workshop. So standardize your format as explained in this section. That can save you much time and trouble. It can add to the sharpness and clarity of what you turn out.

1. Abundant slips. The first essential is an ABUNDANT supply of slips. Paper cost is minor. Your time is valuable. You may write hundreds of slips as you analyze a problem or project or decision. You may be getting slips from others by thousands. So TOOL UP by having a few thousand slips cut up as a starter.

2. Uniform slips. Slips are like the BRICKS used by bricklayers. Exact UNIFORMITY of size and paper type is essential. Without it you will have chaos. Slips which you write may need to merge into those you will get from others. Slips from one project may need to merge with some from another. The dimensions need to be EXACTLY the same or filing and handling will break down. A hand-operated office cutter is not precise enough because paper tends to squirm. Have your print shop cut up 500 sheets of 20 pound bond paper into 4,000 slips, each exactly 2 3/4 x 4 1/4". This uses all of the 8 1/2 x 11" sheets with no waste.

Do not take the short cut of using some other "conveniently available scratch pad" sizes or shapes. Especially do NOT try to use the 3 x 5" size of slips because: a) They do not cut well or economically from bond paper. b) The extra size tempts people to write paragraphs instead of one sentence per slip. c) The oversize slips may cover your table top as you sort them, beyond reach of hand and eye. Please believe this warning. It is based on real experience.

3. Ballpoints. Use a ballpoint, not a pencil, for legibility reasons. Don't use red ink, since you may want to use it later in editorial processes. Don't use a felt tipped or brush point pen, since it uses too much slip space and loses the shingle effect when slips are laid overlapping all but the written parts.

4. Slips used like shingles. Write the LONG way, not across ends. Crowd the very TOP EDGE of each slip. Slips can then be laid like shingles with only the written part showing. Crowd second and third lines close up under the first one. If you allow a top margin, or if you spread writing downward on your slips, you spoil the shingle effect. You will greatly increase your labor in slip handling.

5. One sentence per slip. Write only ONE SENTENCE per slip, never two. If you must explain, do it on a new slip. Doubles or triples on one slip defeat the looseleaf principle. Don't number your slips, since they will be

rearranged later. Avoid words like IT or THIS, which lose meaning if separated.

6. Fit to print. Write legibly and correctly the first time. Slouchy English will plague you later if you permit it now. It is best to stop the labor of rewriting before it begins. Use proper grammar, spelling, capitalization, and punctuation. Write legibly so your typist, or a NEW typist, can read it. Don't abbreviate such words as "mgt" for "management." And don't take such short cuts as the symbol, "&," for "and."

7. Readability of writing style. Write so beginners, learners, or persons outside your specialty can understand. What you put on slips may be later used by others as slips are merged from different sources. Use SIMPLE words, not technical jargon or 12-letter words. Write SHORT sentences. Ten words are twice as readable as a 20-word sentence. Use personal pronouns (you, I, we, our, etc.) freely when applicable. Use colorful, concrete, or image bearing words freely. Use imperative verbs when giving directions, just as if directing someone orally.

8. Acronyms. The first time you use an ACRONYM, give both the words and the letters. Thereafter, the letters are sometimes enough. Much of what you write for yourself will eventually be for the guidance of others. Unless you translate the acronyms, only you and your computer will know what you mean. You might as well write in Greek.

9. Spoiled slips. Don't waste slips. If you spoil a slip, mark it out, turn it around, and use the other edge. Turn it over if necessary. A slip is usable in four positions before it needs to be thrown away. But ALWAYS mark out the spoiled part AT ONCE.

B. MEDITATING ON SLIPS

How to tease ideas out of your brain

As a leader or professional person, you need to be out ahead of those you will lead in a workshop or project or program. Your own insights should be as sharp as you can make them. Following are some thoughts on how to get a head start.

1. Troubles as starting points. Your best starting point for intensive slip writing is a problem situation or activity which you need to improve. Start with what is less than perfect. The Crawford slip method is a way to find REMEDIES for TROUBLES. Pick those that drive you to the bar or the sleeping pills. Start by identifying these negatives. Remedies are then easier to find.

2. Sequence and flow of ideas. Ideas may come tumbling into your mind faster than you can capture them on paper. More often you may stare at blank paper while your mind seems equally blank. But staring at blank paper does little good. If you wait for the perfect sentence to take form, you may wait too long. Try saying it the best way you can. The first few sentences are usually the hardest. Writing one thought, however imperfect it may be, may trigger a better one. Like Kleenex from a box, each slip you write may pull another into place in your mind. Write whatever comes to mind that even MIGHT serve your purpose. You can select, evaluate, compare, or refine later.

3. Face-up "shingle" arrangement. Lay each slip face up in a shingle form as a possible stimulus for more. Look over those before you as stimuli for other and better ones. Cover your table space with rows of slips in shingle position. Go through your slips again for new inspirations. Your creativity will increase rapidly as you challenge your brain this way.

4. Variations of wordings. Word a thought in several ways, and keep all these slips in the row of shingles. You can pick the best worded one later. Try saying it in fewer or in more colorful or dynamic words. You can double your language power in an hour or two. Your language skill will improve along with your creativity. Momentum builds up fast as you put new ideas into printable words.

Write down all the TROUBLES you can, one per slip. Or write all the REMEDIES that come to mind. Switch from troubles to remedies and back as often as you like. Write down all the HOW TO's you wish you could answer. Write down FACTS that might be translated into ACTIONS. Write down possible OPTIONS that need analytical evaluation. Write all REASONS why an option might be good. Write reasons why NOT. Write QUESTIONS to which you need answers. Write answers that come to mind for questions you just wrote.

5. Refinement and precision. The big ideas you seek may come from a series of little refinements. Each slip you lay down scores one more idea, or one more refinement of an idea. Every so often something really good will pop up and open some new doors. Each probe for a breakthrough makes a real "best answer" more likely.

This may be a new way of thinking for you. Skill in it multiplies rapidly. All the "near misses" and close approximations can tell you more when you bring those slips together on your table. But hold fast to the concepts of short sentences, simple language, and only ONE sentence per slip.

6. Depth of analysis. People can usually think about "ten ideas deep" (10 slips) before mental slowdown. But you as a professional can probably double that. Persistence and dedication may let you go 50 deep. Go as deep as you can at one sitting and try again later. Eventually you need to shift gears and go even deeper as will be explained later.

7. Subtargets for deeper penetration. The real mental low gear lies in SUBTARGET analysis. To do this, classify your first slips into kindred piles. Write the key point for each pile on a new slip and UNDERLINE it. Word this key point as a PROBLEM or SUBPROBLEM or TARGET for you to analyze intensively. Then treat each underlined slip as a new target to analyze as intensively as you did the original whole. You can usually think as deeply into each subproblem as you originally did into the whole. Your subproblems give your mind a "lower gear ratio" comparable to when you shift your car into low gear for a steep hill. There truly is a mental low gear that lets you apply more brain waves from more brain cells to the problem you need to solve. A few hours of this low gear creativity can save you some sleepless hours worrying about a problem you can't solve by typical high gear brain work. Give your brain a chance.

8. Intermittent meditation. Doing this low gear meditation on slips at different time periods can help. Ideas often ripen overnight. You may write slips all around the bulls-eye in the evening and then wake up with the answer the next morning. As your clusters of slips build up, they cross-fertilize each other. Yesterday's progress opens new leads today.

9. Dictating your meditations. It is possible to DICTATE your slips. But do them by handwriting until you gain skill. Dictation tempts you to be verbose. Hold fast to the short sentences and simple language. Soon you may gain speed and skill. A variation of dictating is to train and direct your secretary or typist in converting printed or written materials to slips for your collection. Once your typist gains skill in typing on slips, she or he may convert some relevant written or printed materials to slips. The looseleaf principle holds, whether you write or dictate it or have it typed selectively from sheets of paper.

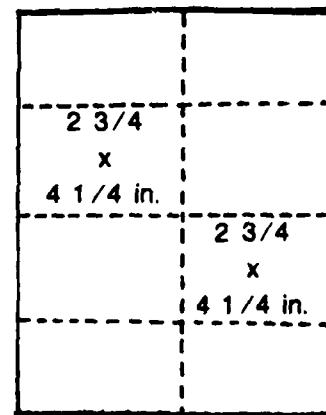
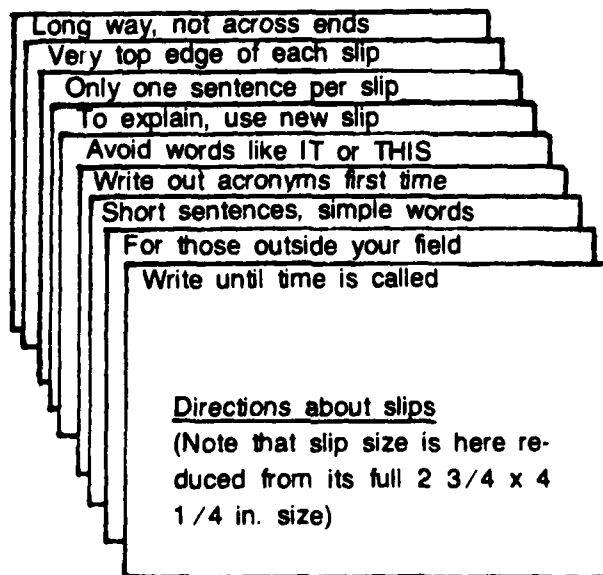
10. Synthesis of meditation slips. Eventually you can classify all slips from all meditation periods into a single composite configuration. Up to the time you make your composite, you may consider each slip and each cluster as TENTATIVE, or as mere raw material subject to further evaluation. But your evaluations can be far more sound because done with the broader perspective of the whole. A later chapter will discuss the classification process. Chapter 3 suggests ways to enrich your own harvest by mobilizing the insights of others.

Don't rush to word processing in paragraphs or lists until you classify your slips. Don't leapfrog over the looseleaf slip stage and go for word processing printouts to be "rearranged later." It is far easier for you to move slips into the correct configuration than to rearrange ideas that are on printout sheets.

* * *

Learning activities for Chapter 2

- a Do your own mental low gear penetration into your chosen project
- b Get your clusters of slips checked and improved by others



Cutting pattern for slips

(For printer, not office cutter, from 20 pound bond paper, 8 1/2 x 11 in.)

CHAPTER 3. ENRICHMENTS FROM OTHERS HOW TO MOBILIZE OTHERS' INSIGHTS

When your own mental low gear has done all it can, mobilize the brainpower of others. This chapter tells how to begin that.

A. WORKSHOP ARRANGEMENTS

How to set up and operate a think tank event

Whether you are workshop leader or host or both, arrangements will depend heavily on you. Don't assume that others will know what you need and that all will be taken care of. Make a check list of essentials for each workshop. No two are alike. Each is a complex project of its own. Following are some factors to consider as you attack it.

1. Audiences. Your problem or purpose will be your main guide as to whom to involve in a workshop. These may be a homogeneous group who have know-how about a single-discipline activity. Or they may need to be a heterogeneous cross-section for an interdisciplinary problem. Or you may need a SERIES of separate sessions, each for a different type of concerned people. Availability of people, or lack of it, may be a major factor in your audience composition. The people whose insights you need may or may not have the time or interest. Those who KNOW are preferable to those who don't. But if you can't get experts you may have to settle for people who are in your reach. Their less-than-perfect know-how may be far better than blank paper or sleepless worrying at night. Their imperfect gropings may trigger better ideas from your own head. Opportunism must play a big role in audience planning.

How many people should you have writing slips? Sometimes a large audience is just wishing for a good speaker or leader for a meeting on just such a problem as yours. If dozens or hundreds need your message, by all means help them and yourself by a workshop combined with a speech and possibly some feedback. You will be giving them full value for their time. A properly run think tank workshop is a CONTRIBUTION to an audience, not an exploitation.

Sometimes you have a valuable research need to which some qualified people could contribute much, but at some cost to them. They may be taken off from company production to work on your problem. In such a case each one's time is costly. You often must balance personnel costs against desired richness of inputs, as you decide on numbers. The law of diminishing returns applies. A good compromise between costs and saturation is 30 to 50 persons. But a dozen who really know may yield more than a hundred who don't. And a dozen who are only moderately knowledgeable may supply what your unaided mental low gear can't.

2. Duration. Try to get 90 minutes or more so you can cover several targets and get good saturation. Too short a time may mean hasty targeting, confusion, and meager returns. If your project has real professional worth, explaining it clearly may get you a half day, or perhaps a longer seminar. If two hours, have a stand-up break but not a bathroom recess. But be flexible and opportunistic. Half a loaf beats going hungry.

3. Facilities. Think tanking is a utilitarian professional activity. You don't need a fancy hotel. But a big convention may be an ideal opportunity. Meet wherever the people are. It may be in a classroom,

conference room, or at desks in a crowded office. You may run several sessions in small groups geographically separated, and merge the slips.

Seating plans may range from tables to chairs with or without writing arms to sitting on lumber piles. But you had better know in advance what the seating plan is. Your plans for slip distribution, writing, and collecting must be tailored to the conditions. And you need reasonable space for passage to see if directions are being followed, or to collect slips.

Will you be dividing into several separate groups? If so, you need to know what space is available. If you need a microphone or projector, where is a place to plug it in? Always be there a half hour beforehand, ready to rearrange if you must. You never know just what emergencies to expect. Imagine forty people to write slips in a fancy restaurant by ultra-dim candlelight!

4. Announcements. Your invitations need not give details about targets or procedures, beyond the general idea. The specifics would hardly be understood or helpful. Don't suggest "boning up" for an upcoming workshop. Any "advance homework" is not likely to be helpful. Fees or meals or mutual obligations and explanations must be made clear. Don't promise in the announcement what you are not in a position to do or deliver. And you need full coordination with host and budgetary authorities.

5. Hospitality. Somebody else may (or may NOT) plan for the doughnuts or the parking spaces or menus or registration routines or hotel reservations or name tags and badges. But your workshop may be ruined by some of those arrangements. Your host may or may not be newly elected or experienced in planning such events. Brief your host people on your needs. Pass along your insights about complications which you have experienced or can foresee. A mere map may help to get people into your meeting on time.

6. Agenda and schedule. Plan and write down your tentative time budget. Build into it some flexibility cushions. Your host may fudge on your first half hour. You may not be free to fudge at the end. If an agenda sheet is to be in all hands, have some flexibility for adjusting to the unpredictable. But plan for a vigorous and productive pace. Every minute can add that many more slips from EACH PERSON, since normal writing speed is about one slip per minute.

7. Slips and writing accessories. Take along far more slips than will be used, to make distribution easy. If seating is in hotel chairs, have individual packs in clips or rubber bands. Always assume that some persons will not have ballpoints. Urge these to borrow from others and be responsible for returning them. But be prepared to lend a few anyway. Giving away ballpoints is a luxury you may be unable to afford. If special materials are to be put in all hands, plan in advance how and when to distribute them.

8. Helpers. You can waste precious time if you try to handle all routine tasks yourself. Get someone to help with such things as distributing and collecting slips. Plenty of help is there if you ask for it. But plan ahead for what you will need and how your helpers are to be assigned or directed.

9. Stragglers. Protect your workshops from the tardy. If late comers are likely, think ahead about how to fit them in. They can cause much

confusion if they miss the directions. A buffer activity or a bit of stalling is sometimes necessary.

10. Conversation. Conversation can waste valuable slip production time while damaging independence. Explain the need for writing instead of talking. If people start commenting to each other, stress the need for INDEPENDENT inputs. If someone wants a general discussion before the slip writing, don't do it. The independence of inputs would suffer greatly.

B. TARGET PLANNING

What kinds of insights to seek from others

"If the trumpeter giveth an uncertain sound, how shall the men go into battle?" Your slip input can hardly be better than the targets you used to get it. Target design resembles research design. What do you need to learn or discover? How can you find out? Read on.

1. Focus on needs. Your targets for a workshop should be your requests for help to meet a NEED, or to IMPROVE something. The feeling of need may originate with you or with some superior in your organization. It may come as a client request for help to you as a consultant. In such a role as a resource person, get as much briefing as you can about what is wanted. But sometimes you get what doctors sometimes get from patients, "I HURT." Your client may want YOUR diagnosis and YOUR prescriptions. Your target planning then becomes the equivalent of the doctor's general physical examination. We sometimes have the client's chief executives REHEARSE the workshop as a way for each to do an independent briefing of us as newly arrived consultants about what is needed.

A workshop should be UTILITARIAN. Its whole thrust is behavioral, functional, or performance oriented. Seek inputs on what is wrong, imperfect, or deficient. Seek ways to remedy the shortcomings. Ask for slips to identify or diagnose the shortfalls. Then seek clues to methods of overcoming the difficulties. Focus on better ACTION.

2. From troubles to remedies. A good typical beginning is a difficulty or problem analysis. Then a natural next step is a method analysis. Or call these TROUBLES and REMEDIES if you prefer. Ask people for what to DO to remedy the troubles. Welcome any REASONS for options they suggest. Even when you ask for slips on troubles, you will get many remedies, and vice versa. You can later process these all together as one, since they are merely positive and negative wordings about the same actions. Encourage use of imperative verbs to state what to improve or how.

Since workshop time is valuable, choose your priorities carefully. Attack the problems or needs or improvements which are major or urgent. Especially address the more complex or frustrating situations or activities. The combined brainpower of a group is particularly needed for interdisciplinary interactions which no single unit can do much about by acting alone.

3. Whole-to-parts sequence. Let your first targets be of the over-all open range diagnostic type (troubles and remedies of the situation or activity as a whole). You need the INDEPENDENT and uninfluenced over-all diagnosis from each person. Avoid premature analysis of one subproblem. That might divert attention from other equally important ones.

To go deeper into the analysis you may ask the same question in different ways. For example, asking for HOW TO's can bring out ideas not reached by troubles or remedies, yet which are diagnostically equivalent. Or you can ask what to DO, then what NOT to do.

These over-all diagnostic slips can be classified and used for a later ROTATION workshop to go deeper into each of the main subproblems. If the diagnosis reveals a strong polarization, you may later get pros and cons to help decide the issue. In that case you may ask for the REASONS back of each argument or value feeling.

4. Need for precision. In all this target planning be very precise about what you want. The targets are to FOCUS all brains sharply on the chosen problems or needs. Define limits or boundaries very explicitly. Fuzzy boundaries frustrate slip writers. They tend to yield generalities that may be of little value.

5. Planned sequence. It is very important that you WRITE DOWN your over-all target and also the several different targets by which you will develop it. Give your over-all target both a noun title and a HOW-TO subtitle. For example: "COST REDUCTION: How to stop leaks and losses in activity X." Saying it both ways gives people two chances to get it. (Like two photos of a "wanted" criminal.) Then elaborate this in a precisely planned "motivational orientation." Next give equally precise directions about format of slips, as presented in the "Format of slips" section. Then follow with one target at a time as written in your targeting notes.

6. Wording for each target. A typical 90-minute workshop can do justice to from four to six targets (Targets A-F). Until you express these in well-considered words, as in notes for a speech, you are not ready. A title-and-subtitle heading for each of these is helpful. Additionally, try stating each target concept in about four different ways, each asking for about the same kind of inputs, but by different wording. These written wordings can then be used as checklist items for your oral use with the group.

7. Rehearsal or tryout. Rehearse your plans by writing a few slips of your own on each of your targets. Doing such a sample of what you will ask others to do may enable you to revise or refine your checklist. But your own slip writing is not a sufficient test of how others will understand. A rehearsal with a friend or family member may alert you to problems you may face with your workshop group. In some cases a "test flight" with a typical small sample can be a good preparation for your main workshop. Your checklist sentences must be clear to people who respond from a cold start.

C. TARGET PRESENTATION

How to focus all minds on the chosen targets

Work from your targeting notes as a checklist as you address your workshop audience. Don't hesitate to hold your sheet in your hand as you speak from it. Don't improvise.

1. Focus on the whole. Arrange the targets so that the WHOLE is analyzed before slips are written on the parts or special variations. Feature the over-all target title and subtitle as the bull's-eye. Possibly write these on a blackboard. Give repetitive reminders of them. Elaborate this over-all problem in your motivational orientation. Repeat it as you present

Target A. Reiterate it as you present other targets. Keep all parts clearly related to the whole.

2. Target A presentation. Your first target involves a double function: a) To clarify the target problem itself. b) To establish the looseleaf way to analyze it. Just SAYING what the target is is not enough. What each UNDERSTANDS about it is what counts. Read your previously prepared wordings as written in your notes. Ask if they understand, and get nods or shaking of heads. Watch faces for signs of befuddlement or uncertainty. Keep on until you think they catch on. Say it in other words. Then reiterate the slip format directions and stress their great importance. But don't trust having reached all. Pick up some of the first slips as a quality control check on how well you succeeded.

3. Presentations of later targets. If Target A is done well, you may be over the hump in many ways. But don't be too sure. The slip directions may not change, but the target concepts will. Don't assume that people will understand Target B just because they understood Target A. If you are overconfident, you may get either frustration or vague generalities. If you are training some co-leaders in this process, they may present the "easier" targets. But reserve freedom for you to supplement or clarify if they fall short. Their mere reading of lines from the checklist is no guarantee of success. Their improvised elaborations might confuse more than clarify.

4. Oral versus written presentation. It is usually better to target orally than to put your targeting notes in all hands. Reveal one target at a time. Keep ALL minds on the same point at the same time. Pass out your notes as a handout at the close if you like, but usually not as a targeting tool. There are some exceptions. One is when you use a ROTATION workshop procedure, which will be described later.

5. The problem of examples. There is a strong temptation to give a few "sample answers" when people don't understand. But one illustration can CHANNEL slips into that one tiny corner of your whole target problem. A sample answer or two can spoil independence of inputs. You may get a lot of echoes of what you already have. Instead you need each person's own unique insights. There are two ways to reduce this difficulty if examples really are needed. One is to illustrate from OUTSIDE the target area. A GARDENING example might be used in a MANAGEMENT target, if well chosen. Another way is to give MANY examples, spread over the whole range of the target area. Neither of these compromises is perfect. The safest rule usually is "no examples."

6. The problem of discussion. Don't let people TALK about the target before they WRITE about it. Discussion can spoil originality. The first views expressed may become stereotypes. Slips become ECHOES. A few assertive people may subordinate the brainpower of many. These assertive ones may not have the real insights that are needed. Present practices may already be based on their often-expressed and forcefully stated views. They may be relying on their overconfidence more than on real expertise. The Crawford slip method is one way to let new views be expressed. Discussion is best done AFTER each brain is well warmed up by writing slips on the target. You are probably doing your workshop because discussions have failed to solve the problem.

7. The problem of "free-wheeling." We favor asking for serious and well considered advice rather than the "wild ideas that are to be tamed later." Freewheeling is better suited to creating advertising slogans than to serious planning or training. Even so, persons are often UNSURE and may well write on BOTH sides of a doubtful issue. By doing so they inject reminders or indentifications of all the factors, options, or possible remedies. To require solid conclusions during the exploratory or creative stages of thought on a real-life problem could be counterproductive. The free-wheeling advocates have a valid point. We caution against extremes.

8. Some case examples to assist your targeting. Your targeting designs and plans are likely to be so diverse and so critically important that the whole of Chapter 8 is given to case examples and models to help you design your own.

D. QUALITY OF INPUT

How to maximize the worth of a set of slips

Value of a box full of slips may depend on many factors: a) Motivation of slip writers. b) Your target selection or presentation. c) Operational factors in your workshop procedure. Some of these factors deserve special attention here.

1. Standardization of format. Slip format standards must be both UNDERSTOOD and MET. People forget. Some disregard your requests. Reminders can help most to conform. But old habits are strong. Unless you do quality control, hundreds of slips may not meet assembly line standards. Stress this assembly line concept. Ask all to lay slips FACE UP as they write, to aid your checking. Writing at the TOP EDGE of a slip is a new and unnatural act for them. Many slips will be in the middle or lower half of the slips, not at the top. Many will be written across ends instead of lengthwise. Many slips will have paragraphs or lists instead of one sentence if you don't inspect and correct. Some will be mere NOUN TOPICS and not SENTENCES. You may get acronyms by the dozens which have no meaning to you. Pick up a few to inspect for errors, then renew your emphasis on the right way. Individually counsel any who are doing paragraphs or lists or have top margins.

2. Independence of response. Talking is the main threat to independence, whether done by you or others. You have to talk to do the targeting. But talk about the target QUESTION, not the ANSWERS. Talking by workshop members can be especially damaging to independence. People may hitchhike on others' thoughts rather than their own. They already have enough chance to do that in typical meetings. Serious and precise thinking on a real problem is more like work than play. Talking instead of writing is a lazy way out of that work. But you run a workshop to solve a problem, not to provide a social party. The assertive people who usually shine in a discussion may lose their moments in the spotlight. Explain the need for independent responses from all, as a reason for silent written thought.

Independence may be affected by the timing of your workshop within an all-day meeting. You might try to get the slips written before rather than after the keynote address. But this is not necessarily a rigid rule. The keynote speaker might be a TARGETER to lay out the scope and boundaries of the problem. But you may not have access to that keynoter beforehand for coordination purposes. Flexibility and adaptability will be needed.

3. Depth of specificity. The best measure of slip quality is SPECIFICITY. The downhill force of gravity is toward generalities and platitudes. In all your targeting stress the need for precise, definite, exact, concrete, tangible ACTIONS that are right or wrong or good to do or avoid. People often take pride in being GENERALISTS. They leave the details to others or until later. But when you run your workshop, those present are the "others." The writing period is already "later." The time for buck passing and procrastination is over. The "later" is now.

We want to stress here the difference between a general PROBLEM and a specific TASK or ACT. The latter tend to be more concrete, tangible, and PHYSICAL. Pressure your slip writers toward these more concrete realities. Don't settle for mere abstractions, principles, or concepts. We elaborate this point in the chapter on procedure writing.

One way to get more of this tangible and realistic detail is for slip writers to elaborate or expand on slips they have written. Ten slips on a target are better than five. Saying it in different words may bring out more detail. Probing from different angles brings out more particulars. Workshop time needs to be long enough to permit such penetrations. But your stressing the great need for the specifics can help greatly, even if writing time must be short.

4. Saturation. The law of diminishing returns applies in a workshop. When slips repeat previous slips, saturation is approaching. Even so, a rare gem may yet show up after some monotonous repetition. But how many people's time can you use productively in the hope for those last few brilliant ideas? Thirty to 50 people are a fair compromise between economy and saturation. But the real test is the richness of what actually comes in.

But saturation has more dimensions than mere numbers of people. One is your writing time on each target. Another is your number of targets. A third is your targeting itself. If it is too general, repetition sets in fast. Another is the selection of workshop people. If they don't know the answers, more people may merely add more repetition of the same generalities. Thirty who are all in one discipline or specialty will repeat each other more than an interdisciplinary group will. You may get saturation by an audience of any one specialty but break out into new territory when you get slips from another discipline. Don't let mere repetition determine where to stop. Consider how well what you get meets the need. Change your targeting or your audience accordingly. Plan your next targets in the light of what you got in the previous workshop(s).

5. Rotation procedure for deeper analysis. You can improve both specificity and completeness of analysis by the rotation workshop procedure. Classify the slips from such a workshop as we have described. State each subproblem category as a new target for slip inputs. Possibly arrange all these subtargets as if they were CHAPTER TITLES AND SUBTITLES for a manual or a project plan. Word each title and subtitle as you did for the over-all target for your original diagnostic analysis. Assign each of these subtargets a code number, 1, 2, 3, etc. Count off for starting numbers, to distribute people equally over all targets. Have each slip CODED to match its number. Have each person write until slowdown on the starting number, then on the next larger one. If the last number is reached, the person comes back to 1 and continues.

If the group is new to slip writing, or to this specific project, you will need to have all write on number 1 to establish slip format, coding, and good habits of "thinking on slips." Also you will need to place the list of

subtargets in all hands as a printed sheet. After each target title and its subtitle you will do well to print a sentence or two of supplementary notes to clarify limits or boundaries.

To get enough overlapping of writers on targets you will need more time and more people. But each one's depth of penetration into specifics is improved. People can usually go as deeply into a single subproblem as they did originally into the over-all target.

This rotation plan can yield you an enormous amount of very specific and useful content if it is based on a good original diagnostic workshop analysis and sound classification. If your classification was not sharp, your ambiguous or overlapping subtargets may cause some frustration and reduced quality. For more on classification, see that chapter.

E. MOTIVATION

How to get full cooperation of slip writers

Commitment and dedication require more than a comfortable chair and suitable rest periods, important as these are. First of all is a sense of purpose, mission, or hoped-for benefits to self and others. Your opening motivational orientation is to reveal that benefit image. Your first spoken words compare to your using the electric switch to light a room. They should be planned with care.

1. Mission definition. Your first few sentences should reveal the over-all target, problem, or improvement sought. They need also to reveal the great need for remedies or solutions. Six sentences can't make it all clear. But they can reveal what will be amplified as your workshop proceeds. You don't have time for a full-scale sales message. But make full use of the few minutes you can allow. They should at least create trust in your ability to use the workshop time well.

2. Glimpse of workshop procedure and safety. Since thinking on paper is a new process to many people, they may feel threatened. They need reassurance that it is possible. Especially they need to be assured that it is SAFE. The point about anonymity and privacy of handwriting must be made clearly and convincingly. If this is in doubt, some may write no slips at all. Others may seem to cooperate but be writing useless generalities. Full trust and confidence in the worth of the mission and the SAFETY of this method must be gained within those precious first minutes.

3. Request for help. The equivalent of "closing a sale" at this point is getting some kind of signal that your people are with you. But don't press your luck too far on this. The fear factor is so present in some groups that you may get a frozen face stare while each wants to see how the tide is to turn. Such a passive rejection is a point against you. It may be best to REQUEST help but not openly ask if they are ready to give it. It is very important that you not open the door for a discussion of the merits of slips over oral methods.

4. Selling the standardization of slip format. You must not only get them to WRITE but also to STANDARDIZE their slip formats to fit the assembly line. This sales function has to develop by stages. To try to do it all in the opening moments may get you bogged down in details for which they are not ready. Make the request for them to conform, then give the directions, as outlined in the section on slip format.

5. Motivation during later stages. Selling your specific target mission and selling the slip writing must be done intermittently throughout your workshop. Benefits can be pointed out in many ways. If your first quality control inspection shows good results, tell them so. If a thick bunch of slips comes in from the first target, SHOW them the stack. In your targeting for later targets, you can speak of benefits not named before. "Nothing succeeds like success." So make the success evident as it develops. Build momentum and morale as you move along. If prolonged writing is involved, use occasional intervals to TALK about the significance of what they are doing. A few two-minute sales messages can do wonders for writing done between.

6. Hard-to-motivate persons. Some people, perhaps from high levels, may want to be "just observers." Their idleness sets a bad example for others. Reminding them of this can usually get their cooperation. Idle people just don't belong in a workshop. They are likely to talk or be talked to. If this is tolerated, the situation may deteriorate rapidly.

7. Open opposition or antagonism. Protest may surface in an organization where morale is bad. You may have been asked to do a workshop diagnosis of some morale problem. Somebody may pressure you to take sides, or may resist something you are trying to do. The need for INDEPENDENT responses is often your best excuse for denying such persons the floor. If there is to be debate about the mission, or about your method, let it be done after the slips are written, not before.

* * *

Learning activities for Chapter 3

- a Plan your chosen project, including targeting notes and, workshop arrangements and tactics
- b Get these plans checked and improved
- c Do a trial rehearsal or actual workshop by these plans, with results checked

TARGETING FOR TROUBLES

- a What troubles plague the situation
- b In your part or elsewhere in it
- c Whatever needs remedying
- d What needs special attention
- e Write each on a separate slip
- f Long way, not across ends
- g Crowd very top edge
- h Write out acronyms first time
- i Simple words, short sentences
- j For people outside your specialty

TARGETING FOR REMEDIES

- a Write advice to self or others
- b In your jurisdiction or not
- c On major or minor needs
- d Whatever might help the situation
- e From your unique vantage point

EXAMPLES FROM GARDENING

Too many rocks
Not enough rain
Slope lets water run off
Back hurts
ETC.
REMEMBER: Long way, top edge, write out acronyms first time

EXAMPLES FROM GARDENING

Terrace the slope
Protect against sunburn
Raise flowers, not foods
ETC.

CHAPTER 4. ORGANIZATION

HOW TO CLASSIFY AND HANDLE SLIPS

The Crawford slip method is a SYSTEM for assembling, organizing, and handling a vast array of thoughts, ideas, and insights. This chapter presents some of the mental and physical factors in that system.

A. CATEGORIZING

How to classify slips

Before you do a slip analysis, your situation, activity, or problem may seem like one big tangle of hopelessly interlocked factors and forces. With a few hundred or thousand slips about it, the miscellany is multiplied. So you start putting kindred ideas together in piles. This is the most challenging and also the most rewarding phase of the Crawford slip method. Following are some specifics on how we do it in our think tank teams.

1. Table surface. Clear the table top area as far as you can reach, plus a little more to spare. A smooth plastic surface is best. Tablecloths hinder manipulation. Freedom from breeze or electric fans is essential. Sometimes this space may get tied up for a day or two. A masonite square or rectangle can be set up on trestles if your only other table is your dining table.

2. Classification cards. Have your printer cut a few hundred cards 3 x 4 1/4" in size. Exact uniformity of height is a critical factor. For that reason don't try to hack these out with scissors or on an office cutter. Obsolete 3 x 5" cards can be cut to 3 x 4 1/4" and used, whether they were used or unused office forms. Or you can cut 4 x 6" obsolete cards into two new cards 3 x 4". The shortness of length causes no problems. Print shops may have some waste cuttings of a size for this use. You will use large numbers of these as you get going, but a few hundred can get you started. It is helpful but not imperative to have COLORED cards so they contrast with the slips. If you spoil one as you write on it, mark it out and use the bottom edge, or perhaps turn it over if both sides are clear. Eventually you will need GUIDE cards for outline levels above the classification card level. These will be described next.

3. Guide cards. Have your printer cut a lesser supply of cards 3 1/8 x 4 1/4" for higher outline levels than the classification cards. The extra 1/8" of height lets them be seen above the classification cards when later filed on edge in your slip box. A color contrast with your slips adds greatly to their usefulness. But have your printer cut off a CORNER, from middle of the long (top) edge to the middle of an end. These guide cards can then be used in RIGHT positions for outline level next above classification cards or in LEFT position for one level still higher in the outline.

4. Preliminary review of the pack. First read a sampling of the slips from each target to get a general feeling for what came in for that target. Check to see that all slips face the same way. Next SHUFFLE well to break up clusters that came from individual persons. Shuffling is to prevent one person's thought structure from influencing your own too much. Then start to classify slips.

5. Indexing your first kindred piles of slips. Classify first your most general over-all "troubles" set of slips. Remedies or supplementary targets can be classified later. Start laying slips face up until kindred piles begin to form. Once you have a few related ones, decide on the key word or term that best represents that pile. Choose these key words as you would in indexing a book ALPHABETICALLY. A thesaurus may help you in this. Let your first word be the one a person would look under in an index. You will need this alphabetical aid in locating the piles on your table.

Write these index words on classification cards. Write in ALL CAPITALS with a FELT TIPPED pen so you can read them at arm's length. Write the LONG WAY. Stay within the 1/4" of the card that will show above the slips when later filed in your slip box. Lay slips on the indexed card so that the index words don't get covered up. To add new slips to the piles, go by the index words, not the last slip you laid down.

6. Positioning your alphabetically indexed piles. Assume that you may have 30 or perhaps 50 piles. Lay an "A - -" index card and its piled-on slips at your far left. Lay a "W - -" card and pile at your far right. Thus "ACCESS TO SUPERIORS" can be in the "A" position at your far left and "WORKING CONDITIONS" at your far right. Put "ACCESS TO SUPERIORS" near the front edge of your table, "ATTITUDES TOWARD WORK" well up from the edge. If a row gets crowded, move piles as needed. The alphabet can help you find them.

7. Performance-oriented categories of troubles or difficulties. Group slips into ACTION piles. Each of the troubles or negatives becomes the nucleus around which to add remedies as other slips are added. Even though you asked for troubles, many slips will offer remedies. Those are merely heads and tails of the same coin. Classify them together into piles according to what ACTIONS are at stake. Keep in mind your goal of IMPROVING the chosen situation or activity. Make categories that best aid in that improvement. Your own professional value system plays a big role here.

8. Shifting or combining piles. What began as one category may turn out to be two as it picks up more slips. Some piles you thought were different may combine as you proceed. Key words may prove to be ill chosen and need changing. As you add slips, you are also refining your own insights. You begin to see kinships between piles, much as you first saw kinships between slips. Feel free to shift wordings on your classification cards as this happens. When you do, shift positions on the table to fit the new alphabetical terms.

9. Merging slips from different targets. Quite often the slips from several targets belong together. Troubles and remedies usually do. How much merging of these sets is best is a professional matter closely linked to your original motivations for the workshop. This processing of slips is a high-level professional function. This chapter has given you some of the mechanistic aspects. Problems and projects vary greatly. Your subjective judgment and professional value standards come into play. Sometimes you may be more artist than mechanic. But a good rule is to form a considerable number of piles, each pile being of closely kindred ideas. The larger structure into which they will fit will then be more apparent. The unique and mutually exclusive piles from Target C may or may not fit into categories you got from merging slips from Targets A and B. What to merge is a matter of professional judgment, for which there is no mechanistic rule. The main criterion is the ACTIONS or IMPLEMENTATIONS which are at stake.

10. Transition from alphabetical indexing to a structured table of contents. If your workshop audience was reasonably representative of the needed know-how, your diagnostic slips may yield a stable and defensible outline for a manual, project, or program. Much depends on the number and quality of slips collected. How adequate is the saturation? How well do you feel that your originally felt need can be met if all these ideas are written up for guidance of others? You may decide you are ready to write it up. Or you may think it best to use these subproblem categories as targets for deeper penetration into more precise and specific know-how.

In either case, you may start matching kindred categories into twos, threes, or sixes, much as you matched slips to start your first piles. Use clips or bands to make each category easy to manipulate as one physical unit. Arrange these banded units in rows according to kinship of content. Each row may be one "PART" for a table of contents. Each banded pile may be a "CHAPTER" within that "PART." Some piles may become "SECTIONS" within chapters. Some may even be mere "paragraphs" within a section.

This process of building a table of contents is a major professional challenge. It separates the architects from the carpenters and ditch diggers. It deserves the utmost care and thought. It introduces the factor of SEQUENCE of categories. Which parts or chapters will your readers need first? How will this sequence affect some of the groupings you had made based on kinship of content? Your table becomes a big chess board. Moving one knight or pawn may expose your castle, or even your queen. Try several architectural designs. First impressions may not work out well. You may need to "sleep on it." An unsatisfactory hodgepodge at bedtime may ripen overnight. Or talking it over with a family member or friend may bring a breakthrough.

11. Checking for misclassifications. Once your table of contents is stabilized, some of your slips become misfits in their new settings or sequences. Also, you will naturally have made some accidental errors in laying slips on piles. So go through each pile, slip by slip, and correct any misclassifications. You will always have some slips that might go in either of two places. In such cases, place the slip in the pile that is WEAK rather than in one where the topic is already well covered.

12. Classification by slots in trays. There is a better way to do all the foregoing steps, if you think tank program is large enough to justify it. That is by having a paper box factory make a few thousand "SLOTS" that can be glued into classification TRAYS. Then your slips can be dropped into the slots on EDGE and bring a vast number of slip categories within arm's reach and eye range. Crawford's own thinkshop is so equipped. He had 3,000 slots made to outer dimensions 2 1/16" high, 1" wide, and 4 5/8" long. Thirty of these slots were glued into an open-top box, 30" long, 4 7/8" wide, and 2 1/8" deep inside. Five such units of 30 slots each were glued to a heavy corrugated base 24" x 30" for a TRAY containing 150 slots. Three such trays give you 450 slots that can be reached while sorting. He slides these trays into a cabinet when table space is needed for other uses. He now suggests only 24 slots per row, since more are hard to reach. Or you may go for smaller trays, each with two rows of 12 slots which you can combine on your table and yet store on 12" wide book shelves when not in use. All factors considered, your best plan may be a good supply of 48-slot trays. Lay about six or seven side by side.

When sorting into the slots, tilt the classification card FORWARD. It can still be read from your sitting position. Then drop slips BEHIND it. Space your categories out well from each other, to allow new categories to be

added between them. Always keep the ALPHABETICAL positioning so you can find your categories. A swivel chair makes it easier to reach the slots at your far left or right if you have a many-slot set of trays before you.

B. PHYSICAL HANDLING AND STORAGE

How to systematize think tank housekeeping

Fine brain work needs to be supported by orderly handling of the slips. Retrieval may be as essential as collection and classification. A whole stack or boxful of slips may lose much of its value if not labeled as to source and targeting. "Quick and dirty" slip housekeeping compares in some ways to quick and dirty food handling. Following are a few lessons from experience.

1. Even corners. Square up a bunch of slips before you apply a clip or band. A projection of one slip to the right and another to the left makes a pile or cluster too long for the slip box. Projecting corners will curl and become unmanageable. Instead of a row of shingles you may have a pile of hay. Tidy up.

2. Positioning of paper clips or bands. Always apply clips at the long TOP edges of the slips, not at ends or bottom. When many clusters are to be clipped or banded, vary the positions of clips or bands. Clip one bunch near the left end, the next half way to the middle, one at the middle, one half way to the right end, and one near the right. Vary positions of bands in a similar way if several banded bunches are involved.

If workshop members are to turn in several such clipped clusters, ask them to vary their positioning of their clips after they EVEN UP their corners. Otherwise you get such unmanageable lumps that you may need a BASKET instead of a file box.

3. Slip boxes. Try to get a box (with or without a top) that is about 4 1/2" wide, to hold slips that are 4 1/4" long. Box length is less critical. About a foot is preferable. Cut down a wider shoe box if necessary. A smaller box glued in the middle of a longer one can serve instead of a movable backstop. Eventually get a uniform supply from a paper box factory. But begin by improvising until you are more certain about your needs. Look in the yellow pages under "Paper boxes" or "Paper products." And shop around. Supplies and prices vary greatly, but costs can be quite low if you order in quantities.

4. Labels on slip boxes. Slips from each workshop or each major project may well be in a separate box for storage and handling. Adopt a standard size of label sticker for all your slip boxes. Adopt a standard FORMAT to identify the content and source. Further identify content of each box by including details about targeting. Some of these identifications may be INSIDE the box. For example, folding and inserting your targeting sheet may revive your memory of what a box of slips is all about.

5. Labels for smaller units of slips. You may get a few hundred slips on each of five targets from one workshop session. You may sometimes have several clusters behind a given classification card. Whatever the size or nature of such a unit, it needs an identification slip or card at its front. Never trust an individual slip to identify the stack or pile or cluster. Even though you are sure which unit is which, you may forget or have confusion later. A classification card is a good identification if the units are to go

directly into your slip box. Or use an underlined title slip inside the rubber band as a temporary identification.

6. Storage of slip boxes. We recommend keeping slips after they have served their intended purpose. They may be very helpful in a future one. Future articles or follow-up projects may build on what you stored. Stored slips may have many parallels to some quite new project that comes to you.

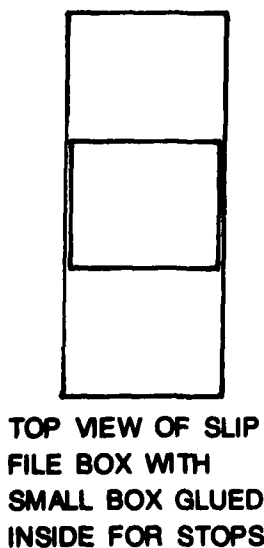
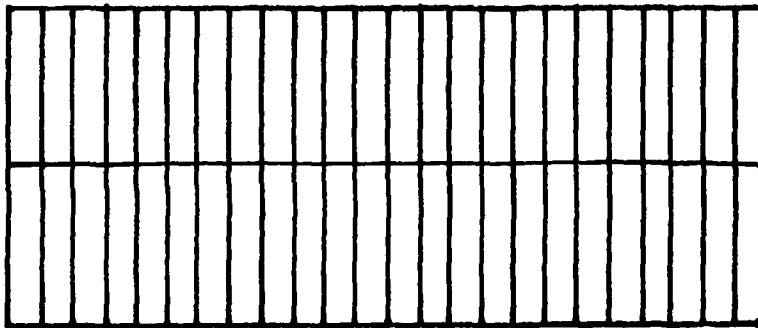
Before storing, even for a few days, be sure corners are evened up so slips don't get curled. If your slip boxes are uniform and have lids, they can stack on each other. Position labels at ends for easy reading when stacked. If there are no lids, a corrugated board can be laid across several boxes as a base for a second layer. Book shelves may permit two or three layers between shelves.

* * *

Learning activities for Chapter 4

- a Classify and organize whatever slips you have assembled from your own mental low gear or from others
- b Get your categories checked and improved
- c Have your entire slip handling and storage system checked, as of its present stage of development

48-slot classification tray. Lay six side by side for big jobs.



SLIP
2 3/4
x
4 1/4
in.

CLASSIFICATION CARD

3 x 4 1/4 in.

GUIDE CARD

3 1/8 x 4 1/4 in., angle cut from middle top to middle end, usable at right or left for different outline levels

AIDS TO CLASSIFICATION OF IDEAS

(Have printer cut these in quantities proportionate to outline levels)

CHAPTER 5. FEEDBACK AND OUTPUT

HOW TO RECYCLE WHAT IS ASSEMBLED

Collecting input may be pointless unless there is output. The output phase of the Crawford slip method will be explained next.

A. FEEDBACK TO SLIP WRITERS

How or what to report to slip writers or those they represent

This section deals with whether, what, and how to let slip writers in on the composite of what they gave you.

1. Do you have a feedback obligation? Relations vary greatly from one workshop to another. Seldom are two alike. In one you may be an honored guest paid an honorarium for an on-the-spot service. Or you may have a consulting assignment from management about a problem in a department. Sometimes the slip writers are doing you a favor at your request. Sometimes a full report will be greatly appreciated. In others it might be read by only a few who asked you to make the analysis. A clear understanding beforehand helps.

2. Are paid employees entitled to a feedback report? For employees on paid time, your workshop is a part of their job. Wages or salaries buy brains as well as brawn. They should not expect an extra bonus per brain wave. Cash awards for creative suggestions may cause an impression that creativity calls for a tip. But the slip inputs are too numerous, too embryonic, and too intangible to be translated into dollar and cents effects on productivity, even if the cash award principle were adopted. Once you concede such an entitlement, you are in for trouble. No organization could operate well that way.

3. Do some management decisions require extra privacy? Some decisions have strong emotional overtones and morale implications. Some relate to trade secrets which should not be published. Managers may need to get employees' unique insights about these. Meeting that need by a workshop might well be done without a feedback of all factors that went into the ultimate decision. Some slip writing may thus be a strictly one-way flow of vital information.

4. Feedback to slip writers is appreciated. People are usually hungry to know "What the others are thinking." They could talk for an hour about a problem after they write slips on it. Do what you can to meet that wish. But you can overdo it. If you gave back a 15-page synopsis of a few thousand slips, few would read it. For a few professionals who are really deeply involved, it may be a major revelation.

5. A "READBACK" is a quick and easy way to meet much of the feedback wish. While they are writing on your second or later targets, you may pick out 20 or more slips that are short, legible, and reasonably typical of the whole. You can read these one after the other without comments in a very short time. Doing so gives all a far better cross-section of the group's thought pattern than if you held a half-hour's discussion of that target. Whether you do this, or WHEN you do it, relates to the factor of INDEPENDENCE of inputs. It is sometimes best to do it AFTER slips are written on all targets.

6. A question-and-answer period is helpful. People may feel let down if they write slips for 90 minutes and go back to their desks or benches. You are there as a special resource and they have some targets or questions for YOU. Usually these relate to the rationale of the workshop you have run. But some will want YOUR answers or positions about the problems or activities on which they have written slips. You had better steer their questions toward the workshop rationale than toward their own technologies or management policies. You would be premature in doing the latter until you have processed their slips. You might give them a fine seminar after you have digested their combined insights.

For questions on the workshop rationale, ask each to write THREE slips, each with one question that all should hear answered. Shuffle these thoroughly. Divide into two packs. Have two questioners alternately feed to you the questions they select as most important. Get all question slips back after time runs out. You may use them as professional data for other purposes.

7. A formal report may or may not be justified. To process a few thousand slips for a structured summation of all the main ideas is a big task. Preparing it will require much professional time from you or your assistants. Who will pay for that time? Who will read the report if you prepare it? What actions or improvements do you expect from their reading it? Obviously those questions were in your mind when you chose the over-all target for the workshop. Tailor your feedback to the original mission. Usually that mission involves many people who were not in the small population sample who wrote the slips. The next sections deal with ways to serve that larger audience.

B. FEEDBACK TO MANAGERS

How to assist with plans or decisions

A feedback report may be a part of your original consulting mission assignment. Types of treatment and types of readers addressed can differ greatly. Your results may be expected to help one or a few high executives regarding some very important decision. They may be to direct a wider range of activities of even thousands of people. Thus your analysis may have been for PLANNING or for TRAINING, or perhaps other very special purposes. Each case may be unique. First let's consider the PLANNING type.

1. Staff researcher role. In this type of analysis you may have a STAFF relation to LINE authorities in the chain of command. You may have been asked to research a problem and recommend a solution. You are like a doctor who is asked to diagnose a patient's illness. You may not have AUTHORITY over anything more than your investigation of the problem. You become an ADVISOR to those who hold the authority. Your role is to meet THEIR needs. They may or may not trust your expertness enough to follow your advice without supporting evidence.

2. Subjective data base. The slips you collect are DATA. They compare to the doctor's x-rays and blood tests, to some extent. Your management people may or may not want to "see the x-rays." They may or may not be qualified to interpret them. How good an interpreter are you? What you recommend must be supported by your investigation.

But slips express their writers' subjective opinions and value feelings. Some of them are self-serving, not unselfishly employer-oriented. Your own interpretations of them are necessarily your subjective judgments, not proven facts. You have your own special kinds of bias and prejudice, just as doctors

may have two schools of thought about some treatments. You may be asked to take a stand on an issue for which no proven best answer is available to you or to anybody. You must make JUDGMENTS and hope you are right. Both your judgment and your professional ethics are fully challenged.

3. Ballot fallacy. Slips are opinions polls, not ballots. A workshop is not an election. Dozens of slips on a certain point don't prove its soundness. Don't count slips as a valid measure of technological soundness. Managers don't abdicate control when they ask for slips. Ultimate decisions should be made by those responsible for implementing them. Your recommendations should represent YOU and your professional judgment. You are not a representative of and responsible to the slip writers as if they were a constituency who elected you.

4. Weathervane temptation. An easy out, in the short run, may be to find what your managers want to do and advise them to do it. If they were wrong, you catch the blame. You become the scapegoat. If they were right, you and they can both be happy for a time. If they are wrong and you have courage to say so, your research and rationale must support what you recommend. Your report may be a bit like a master's thesis or doctoral dissertation.

5. Essentials of a research report. Your title and opening paragraphs must clearly state what the PROBLEM is and why a solution is needed. That means stating the DIFFICULTY or DEFICIENCY or SHORTCOMING or ISSUE which you were asked to analyze. In other words, what TROUBLES must managers find a way to REMEDY?

Your PROCEDURE needs to be documented clearly enough that a critical manager may be assured of its professional soundness. This may include some description of the Crawford slip method, the number and kinds of persons who wrote slips, the targets on which they wrote, and how the slips were processed or interpreted.

Your research RESULTS can fill many pages if you choose to include all ideas received. That can be a very costly and time consuming editorial process. It may be more than managers have time to read, or interest in reading. A synoptic outline may be preferable. The slip box, organized with guide cards and classification cards, may be your back-up if a more detailed audit is desired. Your RECOMMENDATIONS require a combination of both professional judgment and courage. After all the time spent by you and others, a timid recommendation for "more research" may be disappointing. But to recommend a solution when you really found none can be professionally unethical.

Research as a profession is in its infancy or early development stage. The Crawford slip method is less developed than the controlled experiment types of research. For some problems your slips may be overwhelmingly convincing. For other problems they may leave you stuck on dead center. If your data are inconclusive, the courageous and professionally ethical thing to do is to say so. Yours will not have been the first case of research that failed to work a wonder cure. Ehrlich tried 605 medicines before he found a specific "magic bullet" for syphilis.

Your research ACCESSORIES may include such things as tables, graphs, drawings, targeting notes, supporting documents, bibliographies, or footnotes. Academic thesis form books have elaborated many helpful rules for formats and citations for these. Busy people in the world of work may be less interested

in some of these academic niceties. If you can say it in a sentence, do that instead of footnoting it. Putting a graph in the chapter may be better than putting it in an appendix. What a thesis professor might think about your report is less important here than how helpful you can be to overloaded managers.

6. Importance of STRUCTURE. Display your outline by typographical format devices. Don't give managers eighteen or eighty PARAGRAPHS without headings. Make the major divisions recognizable by distinctive typing or underlining, plus NUMBERS or LETTERS that identify each level in the outline. The CONFIGURATION of your report may carry more value than the paragraphs themselves. This typographically visible configuration is what makes the whole greater than the sum of the parts. It is what reveals you as a person with a comprehensive grasp of the problem. It is the ARCHITECTURE that makes your "carpentry" more meaningful to your manager clients. Only workmanlike brain work can stand up if its structural design is thus exposed to view. An unstructured report many raise suspicions that your thinking was fuzzy and you are doing a snow job.

C. FEEDBACK FOR TRAINING

How to write manuals for learners

Some of the activities or problems you will analyze will involve many people, not just a few managers. They may be working in many companies or agencies, not just your own organization. The know-how assembled on your slips may even be the very content needed for improving that kind of work nationwide. Your feedback report may then be a MANUAL for widespread use as a training tool. Here are some ideas for writing it.

1. The "localitis" fallacy. There is a widespread notion that each training program or manual needs to be developed LOCALLY. But workshops with geographically diverse audiences have shown some very similar troubles and remedies in many places. At least there are many rather universal needs which can be met by one good standard manual. Local supplements might fill in what is truly local or unique within a given organization. One really good manual for these universals is likely to be better than the improvised local ones would be. Give your own a chance at that larger role. Your loftier aspirations can improve your local usefulness as well as your wider outreach.

2. The "TWO-STEP" instructional fallacy. Much so-called job training is done by two steps: a) Get the knowledge, theory, principles, or "fundamentals" up in the academic air. b) Leave them there. The hope is that this information will be applied, perhaps in a later chapter or lesson, or perhaps "on the job." It is often so basic, foundational, and sound that it could be applied in many useful ways. But what is so broadly "applicable" may actually not get APPLIED anywhere. The instructor or manual writer may skip the applications because of a diversity of learners or readers. Trainers within in-house training programs may do the same. Applications may be left to on-the-job training. Yet surveys show that on-the-job training is often quite haphazard or non-existent. The result is that many workers or managers learn their actual tasks the hard way.

3. Need for a FIVE-PHASE job training design. A training plan that was well proven during World War II has been almost completely forgotten now. This plan was called Job Instructor Training (JIT). It was given to and

through first line supervisors. It reached millions in munition plants and all sorts of employment. It enabled women to replace men who were mobilized.

The five phases of each new learning experience were not strictly "STEPS." Many went on concurrently or intermittently as insights took hold. But no lesson plan or learning experience was complete if one phase was missing.

The five phases were: a) A functional performance-oriented title for the lesson or job direction sheet. b) A benefit-oriented motivational orientation. c) Step-by-step directions, with essential explanations of "key points" about these. d) Learning-by-doing performance experiences. e) Analytical check-up or evaluation of performance, with necessary reteaching. Your manual may well include each of these five functions if the scope of your research mission permits it. Otherwise you may limit yourself to the training content you collect on slips. Each of the five will be explained further in paragraphs that follow.

4. Titles of training units. Tell your readers in your chapter title or lesson title what they will learn HOW TO DO by studying that material. We recommend a short noun title and a more explicit subtitle, such as those for chapters in this book. The HOW TO language is your surest way to express the action that is to be learned. It has high appeal to learners. The HOW TO books tend to be among the better sellers in the publishing business. The titles and subtitles you use in your targeting tend to bring in slips already worded for your manual.

5. Motivational orientations. Next after reading what is to be learned comes arousing a wish to learn it. This is the SELLING phase of teaching. Point out the BENEFITS. What's in it for the learner or those for whom the learner cares? How can doing it right pay off in easier work, better output, or other ways? Match your sales points to each specific lesson. Have more than one good reason for the learning. What appeals to one learner may leave another cold. After your people write directions for a task, they can easily write slips on benefits from following them.

6. Directions and explanations. The bulk of your manual will be directions for doing tasks or overcoming difficulties. Most of the slips you will get from troubles-and-remedies targeting will be useful for this phase of your instruction. If each difficulty or problem is stated in HOW TO language, you can write many of your remedies in sentences starting with imperative verbs. In your targeting for remedial suggestion slips you may request this verb form. But after you tell how to do it you may need different language for telling why that is the better way. Don't paint yourself into too small a corner of the English language. You may need to say something several ways before your last reader understands it.

Many of these back-up explanations will require some quite factual or theoretical information such as we mentioned in the TWO-STEP procedures. The best sequence for the learner is: a) HOW TO ---. . b) DO it this way---. c) Logical reason why. d) Factual or theoretical evidence that the reason is sound.

7. Performance tryouts. People don't learn as well by monotonous repetition as by thoughtful trial performance of what was directed and explained. Plan realistic and cost effective activity assignments so your learners can actually test fly their new methods. This learning-by-doing laboratory phase deserves a place in your manual after each chapter or lesson unit.

Collect and organize your content first (your directions and explanations). Write it up as the main body of your chapter or lesson. Then invent the performance assignments if you can, at least as a starter. After you see how hard it is to work that vital phase into your learning, you will be better prepared to target for slips from others. Those who wrote slips on how to DO a task may or may not be equally fertile regarding trial performance assignments.

8. Diagnostic evaluations. Practice does NOT make perfect unless there is some way to know what was done right or wrong. A mere "A" or "F" may shed little light to guide the next trial. Evaluations need to be analytical critiques and remedial counseling. A first line supervisor might be in a position to do such critiques. He or she would need to know what the right steps or actions are. A checklist or rating scale based on your manual paragraphs can give a supervisor a basis for such a critique. You can build such checklists into your manual. People such as those from whom you got your original slips can often supply excellent slips for such checklists. There may be many other tools for evaluation than such checklists or rating scales. A workshop for instruction-oriented people might come up with some real gems.

9. Instructional accessories. A manual may need many special features besides paragraphs. A seminar group can invent these by the dozens after they have done slips for motivation, content, performance, and evaluation. Some of them can give you cartoons or line drawing ideas by the dozens, in words or rough outline, ready for an artist to do professionally. They can lead you to needed photos, blueprints, or bibliographies. People who go through your manuscript may come up with some fine suggestions for enrichments you might not invent in a lifetime. Your first edition can start many such minds toward creative improvements that make the first edition seem quite elementary.

10. Professional quality of your manual. Writing a training manual from such workshop slips as we have described may require more subject matter expertise than you have. The slips that come in may be full of errors. Some slips reveal the errors in some others, but not all. You can't expect to catch all of these by your own unaided efforts. The composite of all those people's insights may give you a "college education" about that one problem. But they can't give you the ultimate truth about every point. Even if they do, you may not understand or appreciate some of the finer points.

Don't trust anything you write without getting some second opinions. You may be so aware of what you MEAN that you don't realize what you SAY or fail to say. We all have technological blind spots or misconceptions. You may not be sensitive to some fatal public relations implications. You may be about to make a mortal enemy of some key person or large population segment. You may even have some misspellings or English errors that could discredit you. You need diagnostic critiques of your manuscript from more than one qualified person. Publishers send such manuscripts as yours to independent critics, to protect themselves and you. Don't rush blindly into places where experienced publishers fear to tread.

11. The buck stops with you. The ultimate responsibility for what goes into your manual rest on YOU. You are not a mere pipeline for those who write slips for you. You are not a mere mouthpiece. You can't blame others for your errors or omissions. What you deliver is YOUR product, whatever the raw material that you used. Your own brainpower and brain work hold it together

and make it good or bad. In construction terminology the slips would be the sand and gravel. You supply the cement, the mixing, pouring, and design of the form into which it is poured. You are architect, engineer, and active carpenter on the job. You may also wear some other hats as well. Whatever your level of expertise when you began the project, it will be vastly more at the end. Where do you go from here?

12. Your "classroom" may be almost anywhere. If your manual is good, our new technologies enable you to reach out far and wide. The Crawford slip method and availability of good slip writers can make your manual as good and as useful as your vision and dedication permit. It may be a few copies of a few pages for a few people in your office or department to meet a one-time need. It may be a thick manual for use in your company or agency year after year. It can be a textbook for use in universities or trade schools or self-education nationwide. It can be put into electronic memory systems for retrieval or reproduction for many types of users. Whether you present your ideas by TV or radio or videotape or newsletter or auditorium or lecture circuit or some other way, the key factor is a rich body of know-how organized so it is meaningful and understandable for the learners. So put your best talents into making it so good that those who need it will want it and be well served by it.

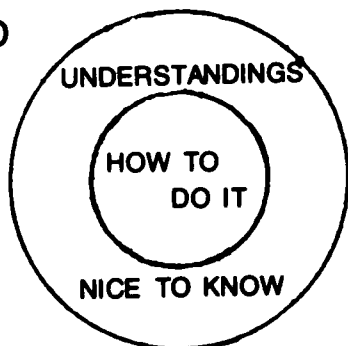
* * *

Learning activities for Chapter 5

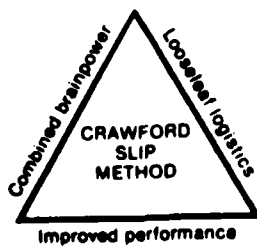
- a Plan the feedback methods you may use for slips you have collected or will collect for your chosen project
- b If in a class or study group, take turns doing readbacks or other feedbacks
- c If learning alone, get your feedback plans checked by friends or associates

CRAWFORD

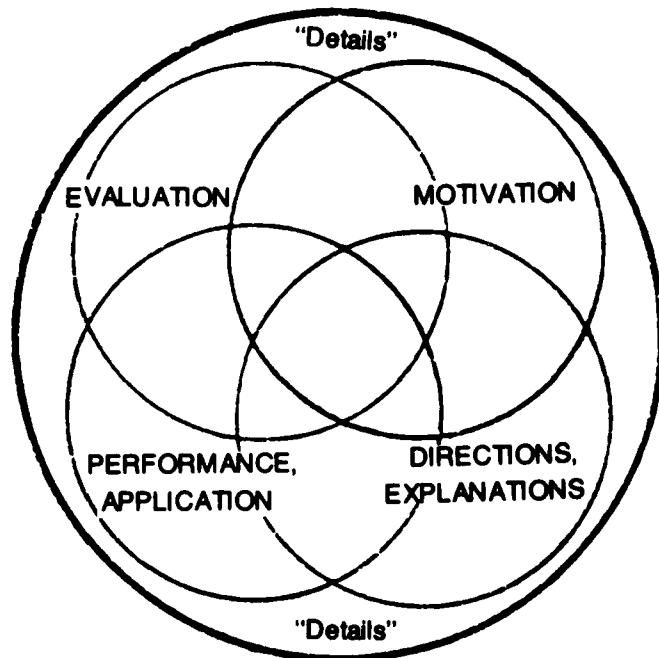
SLIP METHOD



FOCUS ON PERFORMANCE



LEARNING TO PERFORM THE TASK



CHAPTER 6. PROCEDURE WRITING

HOW TO STANDARDIZE SOME CRITICAL TASKS OR INTERACTIONS

Up to here we have dealt mainly with analyses on the PROBLEM level of generality. But PROCEDURE WRITING can penetrate much deeper into the SPECIFICS of tasks or interactions. Precision in work or management requires such penetration. The "general idea" about how to do something is not good enough. The cook's need for RECIPES has its parallel in work or management. This need is not being well met. This chapter starts you on some better ways to meet it.

A. SELECTION OF TROUBLESOME TASKS

How to choose tasks to standardize

Most work or management activities involve a number of specific tasks or interactions that need improving. If you can't fix up everything, be selective. Identify and tighten up performance of those that are most troublesome. Some of these tasks may be one-person actions. Some may be complicated interactions in which many persons, disciplines, or jurisdictions share. Following are some thoughts about such task identification.

1. Pareto's law. The Italian thinker, Pareto, said about 20% of the tasks cause about 80% of the error or confusion. Better planning, training, or control of these high-priority trouble makers can do wonders for productivity. A vast majority of the work may never or seldom go wrong. So focus on what does. A few of these tasks may be done wrong much or most of the time. Some go wrong in different ways because each person is just groping for a method. Those who have really learned, and those who are productivity minded, can certainly plan better ways than beginners will invent from a cold start.

2. Error analysis. Counting the number of rejected parts can point you to some tasks that need to be better controlled. Accident records can point you to activities that need more precise safety standards. Procedural foul-ups such as lost documents or missing parts or costly delays can point you to interactions which need better regulation.

But knowing the NUMBER of defects may not tell you the REASONS or the REMEDIES. Those close to the error-prone tasks probably can. Those who have made or who are still making these mistakes can tell you some things about what their difficulties are. You may need to piece together the partial insights of several persons before you get the whole. A few minutes of slip writing by a workshop group may put many or most of those pieces together. Then someone who knows the task well may write down the exact recipe for doing it RIGHT. Error correction is more than mere error counting. The criteria for including tasks in your list of tasks to standardize are subjective judgments of those who write slips.

3. Organized task lists. Judgments will differ as to which tasks are in Pareto's 20%. And there is nothing sacred about 20% as your cut-off point. Some that are less troublesome might still be worth improving. No one planner or procedure writer is likely to be qualified to make all those judgments correctly. The combined perceptions of a workshop group can build a quite extensive tentative task list in a few minutes of writing time. Selecting from such a task list the ones on which to write standard procedures will be much easier than if you try to do it from blank paper. The slips can be

classified in preparation for a later procedure writing workshop. In a typical organization or activity you may expect to get a few hundred tasks that are judged to need standardizing. Even so, additions and deletions will probably occur when you get down to the actual procedure writing.

Crawford used this plan to develop procedures for a large campground convention center. Conference groups came for a day or a week or longer. Many groups might be there at the same time. Groups might number 20 or 1,000. Those guests needed a lot of service from a lot of newly hired young people. There was almost nothing on paper to direct all those helpers. How could their supervisors possibly train or direct them?

Crawford organized a procedure writing project to attack this problem. All employed personnel got a chance to write task slips. The tasks they suggested were classified into six main lists. There were 50 to 100 tasks in each list. The six categories were: a) Kitchen and dining room. b) Fast foods and drinks. c) Office. d) Housekeeping. e) Buildings. f) Grounds.

This outline became the outline for the procedure manual that was to follow. It was duplicated for use by those who would write the procedures. Kitchen tasks were code numbered starting at 1, fast foods at 100, office at 200, etc. This coding was an aid in later handling and assembling the procedure slips for the numbered tasks. Tasks that were added were given code numbers following those on the duplicated outlines.

4. Procedures written without an organized task list. You may prefer a different plan for identifying the troublesome tasks. You may need to get promptly into procedure writing, without waiting for the task slips to be processed into an organized task list. Your people may come from far away and be available for a very short time. This was true of the Crawford-Demidovich procedure writing for the Tactical Air Command. We had 90 people from around the nation and the world. We had three mornings in which to write and agree on procedures for the CONTRACTING function throughout the command. As a workshop group we selected the tasks and wrote and agreed on the procedures in those three mornings. Proof that it was well done lies in the fact that other commands adopted and reprinted our manual for use in their own contracting.

Since our 90 contracting people had different kinds of special duties, we asked each to select his or her OWN troublesome tasks on which to write procedures to guide his or her SUCCESSOR. The 90 persons had been pre-selected for this conference, to cover all the specialties and Air Force bases in representative ways. By choosing tasks on which each one's successor would need help, we had a good prospect of covering the whole range of tasks fairly well. Each chose a task for the first procedure draft by two criteria: a) Troublesome to a successor. b) Well known to the writer. We expected and got more than one set of procedures for each of a few tasks by the end of the second morning. Those duplications were cleared out the third morning by their selecting the best, or merging good features in some cases. We expected and got some GAPS as well as duplications. These were easily spotted the second day and promptly filled in the third morning. This way of selecting the tasks was well suited to the realities of that short-time availability of our professionals.

Note that this CONTRACTING function is loaded with INTERACTIONS between many persons and specialties. The whole project differed greatly from some of the one-person tasks at the convention center.

5. Difficulties in distinguishing tasks from problems. When asked to identify troublesome tasks or interactions for which standard written procedures are needed, people write about 20% tasks and 80% PROBLEMS the first

time. The very concept of specific best ways to perform specific acts or transactions seems a bit strange to a lot of workers and managers. They may be surprised or puzzled if you ask HOW and want them to put the right way into words. Experience has told us this so many times that we expect it and plan accordingly.

Your targeting for task slips should ask for SPECIFIC ACTS that need to be done in EXACT BEST WAYS and MUST be done right. But you will probably get some generalities such as "a day's work for a day's pay" or "better productivity." Even if you ask for tasks that should be done in a specific BEST SEQUENCE, some slips will be of that general kind. Asking them to name tasks that should be done "BY THE NUMBERS" still may not get rid of the generalities.

Say all these things and emphasize them to the best of your ability in your targeting for task slips. Then let them write a few in an effort to comply. Collect these first ones and shuffle well to preserve anonymity. Then read a few and say why each is or is NOT a suitable task for which step-by-step procedures could be written. Get a "nods-or-frowns" vote from the group on one after another. They soon begin to get the point.

One such quality control critique will get most of the group on target for specific and standardizable tasks. But, as in all teaching, you will have a few who still miss it. Then ask for a new set of task slips, each to meet the standards and to be the basis for written step-by-step procedures. For our Air Force contracting people we got these second-trial slips in clipped clusters with each writer's name on the front slip. That afternoon we and an 8-person editorial task force checked every slip and noted errors in red ink. The second morning we read a number of these critical comments anonymously to the whole group of 90 persons. That reading enabled all 90 to learn from the errors and successes of the selected case examples. By this means we got almost 100% mastery of the difference between a problem and a standardizable task.

Note that for all this procedure writing the anonymity factor was abandoned. Names were signed for reasons of professional accountability and also as an aid to intercommunication as we improved and refined the drafts while in the slip stage.

6. Some examples of tasks for which written procedures may be needed. The specificity level we are stressing may become more clear by some task examples from the campground kitchen: a) Sweeping commissary floor without raising dust. b) Operating electric potato peeler. c) Cracking eggs. d) Placing dishes in dishwasher. e) Cleaning can opener.

Contracting examples: a) Determining priority of sole source requests. b) Awarding construction contracts. c) Documenting oral purchases. d) Conducting site visit and labor check. e) Writing purchase order modifications.

Factory examples: a) Checking customer orders for correctness. b) Giving notices of engineering changes. c) Writing shop orders. d) Promising delivery dates. e) Handling order cancellations. f) Getting drawings released.

Examples from manufacturing and worldwide marketing: a) Adding to product line. b) Releasing tooling patterns. c) Releasing product for distribution. d) Entering orders into compute system. e) Requesting capital expenditures. f) Submitting jobs for word processing.

7. Examples of "tasks" that are not really specific tasks but general PROBLEMS. Many supposed task slips name such general or vague difficulties

that you can hardly imagine any standard steps for doing them. Some name difficulties that arise in a great many tasks. Some are mere goals to achieve. Some are CATEGORIES that might include hundreds of specific tasks. Some are extremely intangible. Some are complex activities or programs that may involve hundreds of tasks. Some are highly desirable and essential actions which involve professional judgment and should not be straight jacketed into any prescribed cookbook recipe. Let's name a few such, from a group of industrial managers: a) Making changes. b) Reducing dictatorship. c) Improving workmanship. d) Operating efficiently. e) Communicating. f) Getting cooperation. g) Using talents. h) Raising quality.

Others in that same manager group wrote the following which you will recognize as much more specific and standardizable: a) Writing up customer orders. b) Handling order changes. c) Keeping track of time for time cards. d) Preventing omission of items from shipments of - - -. e) Quoting a job. f) Scheduling meetings without conflicts. g) Preparing project cost estimates.

8. Examples of poorly worded task titles. Many of the first task titles can be improved by small editorial adjustments. Try to catch these at the outset. We call this "preventive editing." That can head off much rewriting later. Some examples follow: a) "Ordering and shipping point-of-purchase materials." This is obviously TWO tasks, not one. They should be on two slips. You can hardly ship by the same step-by-step directions by which you order. b) "Working on weekends." It was hard to imagine what was in this writer's mind. It turned out to be "Protecting security when working on weekends." c) "Training engineers to work in our company." This seems to be an extremely broad and comprehensive program. As stated, it is a complex PROBLEM. Within it might be many standardizable tasks. Some parts of it may have to be left to professional judgment.

9. Available safeguards. Even those who write such "non-tasks" and whom you don't correct at the outset have two other chances to adjust their slips. When they try to write down the steps, they may see their error. If not, it may be corrected for them by those who critique their procedures during the IMPROVING stage of procedure writing.

B. FIRST DRAFTS

How to get tentative directions on paper

The Crawford slip method for writing procedures involves our own "standard procedures for writing procedures." Someone who really knows a task well can put the right eight or ten steps in doing that task on slips in a short time if the editorial format for doing it is clear. This writing is done in two stages: a) First drafts, explained in this section. b) Improvement and refinement, explained in the next section. Both stages involve an assembled workshop group and a great deal of interaction among persons. The two stages become intermingled and concurrent fairly soon after a few first drafts are completed. The group holds together as a unit throughout.

1. Composition of the procedure writing workshop group. A typical activity, program, or mission may involve hundreds of troublesome tasks. That magnitude of effort suggests mobilizing many people to get it done. But numbers are needed for other reasons: a) Those troublesome tasks are so diverse that a small group of writers would lack the know-how for some of

them. b) Many are INTERACTIONS which require writers from both sides of interfaces. c) You need persons from supervisory or managerial levels, in addition to worker levels, for both their over-view perspective and their authority to adopt and implement what is decided on.

For our contracting procedure writing described above we had about 90 persons working for the three mornings in which we wrote a 100-page manual. Those 90 people ranged from sergeants to colonels, and equivalent civilians. They were pre-selected to represent all bases in the Tactical Air Command and the headquarters, plus a balanced representation of the different kinds of contracting functions. Additionally there were about ten representatives from other Air Force commands.

Our first draft targeting called for each to select and write up tasks in his or her OWN areas of expertise. Because of their pre-selection this assignment automatically spread them fairly evenly over the total range of tasks. With this many people writing first drafts, we had most of the manual in draft form by the end of the second morning. Furthermore, large numbers of these first drafts had the signatures of two or more others from the improvement stage. The combination of large numbers physically present in one room and precise editorial control made this speed possible. The same three factors added as much to product quality as to speed.

2. Build-up before first draft writing. The 90 people in the TAC workshop began by writing troubles-and-remedies diagnostic slips such as were described in our previous chapters. This diagnostic analysis on the general problem level served two purposes: a) It established the format and built initial skill in slip writing. b) It gave them an initial warm-up or mental conditioning for the more precise and exacting work of procedure writing. That build-up was accomplished before the mid-morning break the first day. We were through the TASK identification and into the first draft instruction by noon the first day.

3. Directions for writing first drafts of procedures. Following are the step-by-step directions we put in all hands as guides for writing first drafts of procedures for selected troublesome tasks. In the list which follows, the underlined item is our "Task title slip." Each item below it, lettered a, b, c, etc., is one step in the sequence of writing your own first draft. Although these steps are lettered here, yours should not be lettered or numbered until the very last moment, just before printing. The sequence should be kept tentative until the improving is completed. Now study the steps very carefully.

Writing first drafts of procedures

- a Write task title in ---ing form on task title slip
- b Underline task title slip to distinguish it from slips written about it later
- c Lay it face up before you to start "shingles"
- d Write steps for doing task, one per slip, NOT numbered
- e Word each SIMPLY, for learners to understand
- f Arrange like shingles, overlapping blank areas
- g Check all for correctness, clarity, sequence
- h Move task title slip from top of shingles to bottom
- i Telescope together and even up corners exactly
- j Apply paper clip from TOP of cluster
- k PRINT your name, last first, at bottom right of task title slip, as professionally accountable

Those procedural directions had two main editorial functions at our TAC workshop: a) To standardize the language and typographical format of 90 people's ideas so they could fit into the assembly without rewriting. b) To facilitate manipulation of the slips as changes were made in content or sequence. There were good reasons for each of these procedural directives. They are so important for you if you direct procedure writing that they are elaborated in the following paragraphs.

4. Uniformity in task titles. Note in lines a and b that we standardized the language and typographical format of all the task titles written by all those 90 writers. Unless we had requested the "---ING" language form and the underlining, we would have received a hodgepodge of wordings and typographical styles which would have required excessive rewriting and possible changes of meanings.

5. Positioning like shingles. The face-up shingle arrangement on the table gave all a uniform way to scan sequences, a great aid when the improvers came into action. Laid that way the lines could be read as if on a page, yet insertions or removals or changes of sequences required no rewriting of the whole page.

6. Numbering of steps. The natural habit of NUMBERING slips would have given trouble when sequences were changed if we had not headed it off. That step had to be left until the very last editing and proofreading were completed by the final editor. When eventually printed for general use, numbers or letters to denote sequence are very helpful. We prefer lower case letters to numbers, as a rule, because lists of steps may go beyond 10 and cause some problems of spacing. The 26-letter alphabet solves that problem better. Even if a list of steps goes beyond the letter z, continue by a', b', c'. But if you have that many steps in doing a task you probably have two or more tasks and should do a breakdown.

7. Simplicity of language. Since procedures are to direct learners or beginners, they should be in learner language. Use words with few letters. Use sentences with few words. Reability comes down as numbers of letters or words go up. Printing costs also go up as letters and words do. Technical jargon and acronyms can spoil the meaning. They may be absolutely necessary. Find some concise and clear way to explain them in words.

8. Sequence of steps. The shingle arrangement makes sequencing easy for the first draft writing, as well as for the improving stage. Unless insertions or removals or rearrangements can be made without rewriting a page, there is a strong temptation to "let well enough alone" and print something less than the best.

9. Clipped clusters. Paper clips were supplied to all 90 writers. Each task title slip with its clipped-on set of procedures, whether first draft or improved, had to be easy to manipulate as a unit. Those clusters could then be grouped in kindred piles or rows to structure the 100-page procedure manual.

Lest you might think it trivial, let us emphasize two "trivialities" that are essential to manipulation of these clusters: a) Evening up the corners. b) Spaced positioning of clips. Unless corner evening is stressed and checked, some clusters will be too wide or tall to go in the slip boxes. Forcing them in will cause curling. These curled slips then behave badly as

you try to lay them out like shingles. Without standardizing clip positions you will get some clipped at top, others at bottom or ends, and a great many at one place where they make an unmanageable lump. Standardizing these details takes only a few minutes. Leaving them to individual whim can add greatly to labor and frustration.

10. Writers' signatures. Procedure writing slips cannot and need not be private and anonymous as the diagnostic problem slips are. The need for critiques and mutual aid in the improving stages is great. The need for ACCOUNTABILITY is also a factor. Procedure writing is a high responsibility. Some debatable issues may be involved. Who wrote what may be important to know before printing for general use. Signatures are helpful throughout the improving and final editing. Names need not be printed in final manual form. Improvers need them in order to FIND the originator or other improvers when a proposed change needs to be discussed. The names on clusters are a bit like addresses on mail. They also resemble signatures on contracts. Of course, as in a contract, signing should represent your agreement about what you sign.

Positioning the signatures needs to be standardized. The very bottom right corner of the task title slip seems best. Each improver can sign directly above. Since the task title is at the very top, there is room for several improvers' signatures if needed.

The last-first arrangement of names has special advantages. Alphabetizing by surnames makes several kinds of handling easier. For example, alphabetically arranged clusters are easily passed back in an alphabetically seated workshop. It can aid improvers to find writers or previous improvers.

11. Sample first drafts. An example of procedures for a task you may need to do often can further clarify our directions about first drafts. Check it and imitate it for other tasks you need to standardize.

Getting a supply of Crawford slips cut up

- a Do NOT use a hand-operated office cutter
- b Give your printer the following directions:
- c Cut 500 sheets of 20 pound bond paper, size 8 1/2 x 11"
- d First slice vertically for two strips 4 1/4 x 11"
- e Then cut each strip into four exactly equal parts, each 2 3/4 x 4 1/4"
- f Deliver the 4,000 slips in bulk, not in small packages

A second example may further assist you to standardize your drafting of procedures. The task is "Doing a readback" after people write slips in a workshop.

Doing a readback

- a Postpone any readback until it will not damage independence
- b Shuffle well a random sampling of slips
- c Select those that are short, legible, and understandable
- d Read 20 or more without commenting on them
- e Do not permit discussion until you have read those selected
- f Point out that these are merely a random cross-section

12. Need for precision. If the foregoing seems a bit exacting and regimented, it IS. It has good reason to be. For 90 professionals to write and agree on and adopt nearly 200 sets of very complex and complicated procedures or work directions, there must be some very precise editorial

technologies and controls. This is a high-technology function. If you try to do it by horse-and-buggy methods, you will probably fail. If you try to be "lenient and flexible" in order to please the easy-going ones, you will probably fail. You simply can't build a watch or a computer or a procedure manual by blacksmith technologies.

C REFINEMENT

How to get procedures improved and adopted

The same workshop people who do the diagnostic analysis, identify the troublesome tasks, and write the first drafts also do the checking, improving, and adopting. In fact, the improving begins very soon after the first draft writing starts. The two continue intermittently and concurrently throughout the workshop series. The whole improving procedure will now be explained.

1. Directions for improving first drafts of procedures. To get the whole sequence for the refining process before you, please study the following list of steps carefully. Details and reasons for each item can then be explained in later paragraphs.

Improving and adopting procedures

- a Assemble procedure writers, improvers, adopters in one workshop for whole process
- b Work in pairs to check drafts for correctness, completeness, sequence, clarity, fitness to print
- c Preserve shingle sequence throughout, not reversing it
- d Don't number slips, since sequence may change
- e Don't change another's slips until you both agree
- f First improver SIGN above first writer after agreeing
- g Later improvers sign above previous ones
- h Do this with peers, interfacers, persons above, below
- i If unable to agree, seek higher jurisdiction or defer
- j Submit agreed-on version for adoption, enactment
- k Do necessary follow-up technical review and editorial checking later

2. When to ask for a critique. When you have the steps for one task in your best wording and sequence and can SIGN it, that is a good time to get it checked. If you are on a wrong track, a critique by someone else can prevent your doing others the same way. If the person sitting beside you is at about the same stage, trading insights can help both. An informal room atmosphere may permit a few dozen such pairings to be in progress at one time.

3. Whom to ask for criticisms. Availability at the moment is a pretty good criterion for selection of an improver. Since all who were assembled possess some kind of awareness or expertise, start wherever you can. Your seatmate may be a novice about your specific task. But so is a learner for whom you are writing it. Hence your seatmate can react from a learner's point of view. Or your seatmate may be a high level manager who can judge your output from a broader perspective. If other jurisdictions are involved, get your draft checked by someone in each. Variety of vantage points of your improvers is good insurance against your own oversights, blind spots, or errors. Also, a variety of critics gives more chances to catch errors of English and poor choices of words.

4. Permission for changes. No improver should change anything in a draft without consent of those who previously signed it. Previous good copy should not be discarded without a hearing by those who had prepared or refined it. Signatures and alphabetical seating make it easy to find and consult about proposed changes.

5. Back-to-front order in shingle sequences. The PAGE EFFECT obtained from having the first step slip overlapped by the next causes the first one to be at the BOTTOM of a cluster after they are telescoped together. We strongly recommend that you NOT reverse this order. The same cluster may be laid out several times as it is worked over and talked over by improvers. This back-to-front order within the cluster should be UNIFORM for all in the room.

6. Numbering. Do not assign numbers or letters to any of the slips even though you are sure of the sequence. Who knows when some change will be needed? Leave that open until the very final editing for actual printing. Then preferably use lower case LETTERS for the steps instead of numbers, to avoid the two-digit spacing problem.

7. Signatures of improvers. Signatures indicate who is professionally responsible. Those who agree on steps in a task should sign and be accountable for what they agree on. This is important in the ADOPTING or AUTHORIZING part of the improving. The superior who authorizes adoption of procedures may not know the details as well as do some who signed for them. The editor who tries to straighten out linguistic tangles may need to contact the authors about what they meant. Signatures make this follow-up possible.

8. Inability to agree. Some procedures are debatable. There may be two well balanced schools of thought. The workshop leader may be able to resolve some of these issues. Some may need to move up to higher levels of authority. Having all levels in the workshop is a great aid. The decision maker has a chance to hear both sides from people who are close to the specifics.

9. Deferred decisions. Some disagreements may have to dangle because nobody in the workshop has authority to settle them. A note to that effect may be included after the task title slip. A better way may be for TWO sets of procedures to be drafted and signed by those who advocate them. These two options can then be offered to the decision maker. Notes may be included or attached by supporters of each.

10. Position papers seeking authorization for procedural changes. The procedure writers and improvers may agree that the present way is not good but that it can't be made right except by some higher jurisdiction. That jurisdiction might even be Congress. It is not realistic for you to petition a higher authority to formulate and hand down a better way. You had better write and agree on that better way yourselves, in this workshop you are in. Then go a step further and get slips written on WHY these new procedures should be adopted, authorized, or legislated. The higher level people are probably too busy to do your procedure writing for you. They may have time to approve yours if yours are well written and well supported by position papers. How to prepare those position papers could fill another book.

11. Some over-all tips to procedure writers and improvers. The following tips may improve results from procedures you write:

- a Make all clear to beginner or learners
- b Be concise to conserve printing
- c Omit articles (a, an, the) if clear
- d Write FIT TO PRINT, not to "fix-up"
- e Be very legible, to help typist
- f Rewrite if revisions tax legibility
- g Don't expect typist to improve language
- h Write as if all depended on you
- i Try for 6-12 steps per task
- j Divide into more tasks if complex
- k For acronyms, add full words in parentheses so beginners get it both ways
- l Imitate language style of these hints, but don't sacrifice clarity to brevity

* * *

Learning activities for Chapter 6

- a Write a complete set of procedures for a task in which you are expert
- b Sign your task title slip and get your set checked, improved, and signed by one or more others
- c Get others to write complete sets of procedures and get them checked, improved, and signed by others, all under your editorial leadership

STANDARDIZING PERFORMANCE OF TROUBLESOME TASKS OR INTERACTIONS (Task title)

NOTE: Below are directions for procedure writing, done in a format used in the World War II JOB INSTRUCTOR TRAINING program (JIT). This format was used to train millions for specific wartime tasks. Millions of sheets like this were printed, mimeographed, hectographed, even handwritten, to put new people to work. Entries here are in terms of procedure writing by the Crawford slip method.

<u>TASK STEPS</u>	<u>KEY POINTS</u>
1 Identify troublesome tasks	Each person writes task title slips for over-all task lists
2 Write first drafts of procedures	Each writes and SIGNS directions for tasks in own areas of expertise
3 Get drafts improved	Pairs confer, discuss, and agree on both steps and wording
4 Get drafts signed	Each improver signs after agreement with previous signers
5 Get drafts adopted	Include among improvers persons with authority to approve and adopt
6 Get signed drafts checked	Edit for English, technology, legality, security, public relations, etc.
7 Make procedures known	Print, publish, or post where they can be followed
8 Train for understanding and application of procedures	Use self-instruction, on-the-job training, or classes
9 Get compliance	Apply controls, discipline, or enforcement as needed

CHAPTER 7 AUTHORSHIP AND IMPLEMENTATION

HOW TO MOVE FROM THINK TANK TO PRODUCTIVITY

As a think tanker, what you assembled from a few workshop groups may go to a far wider reader audience. You may have a bigger mission. Your slip writers gave you a message for your mission. Many in our nation need your message. We need better ways to do each part of the nation's work. Accept your role as an agent of change. There are still bigger missions for you, as soon as you can complete this one. Write to advise, instruct, persuade, or inspire the larger numbers. This chapter may help you to deliver your messages well, convincingly, and SOON.

A. AUTHOR ROLES

How to compose copy from assembled slips

Some authors write as artists. Others proceed more as mechanics or technicians. The Crawford slip method leans heavily on technology. You don't have to have been born with some mystical literary talent. You need instead to be orderly, systematic, and willing to WORK at your writing. You are more a teacher than a poet. Your writing is more problem solving than intuition.

1. Audience selection. Decide at the outset of your project whom you are to reach and help. Define your mission or goal. Avoid the "to whom it may concern" error. If you write for "everybody" you may not be read by anybody.

2. Space budget. Decide or get clearance as to how many pages the printing budget will bear and the readers will tolerate. Survey your slip box(es) to estimate how much information is available to convey. Make tentative judgments as to how many words or sentences or pages are feasible for your chapters. Keep a sense of proportion. Write up one or two typical units to see how many lines or pages the whole is likely to fill. Adjust your scale of writing, or perhaps your printing budget, accordingly.

3. Condensation. Boil down rather than beef up. As with a financial budget, there are some things that it would be "nice to have" but which you can't afford. It is far better to condense than to over-elaborate. Say it well in fewer words. Pack forty words into 20, or perhaps four. A well written small book beats a fuzzy big one.

4. Design. The CONFIGURATION of your message may convey more than do the WORDS. Keep like things in parallel or consistent language and format. Put the pieces in with care, as you would those on a chess board. Fit single thoughts in, carefully, a line at a time. "SOLVE" your paragraphs. You are piecing together a mosaic. Let someone else paint the sunsets.

5. Correctness. Make it correct in both form and substance. This includes grammar, spelling, punctuation, short words and sentences, personal pronouns, and active verbs. But correct CONTENT is even more important than correct language. What you print must be true, valid, and authentic. Offer your opinion as opinion, not as fact. But be free to express your subjective judgments when certainties are not possible. To do so may be risky and require courage. Overcautious perfectionism may be a cop-out.

6. Critiques. Share the risk. Have someone, or several persons, check your manuscript. The "IMPROVING" process we described for procedure writing can apply to whatever you write.

7. "To thine own self be true." What you release is your professional responsibility, regardless of how many slip writers or reviewers have made inputs to it. You can't abdicate your author role. You are responsible for the final product. Give credit for help you get. Take the blame for any deficiencies. Better still, PREVENT the deficiencies if you possibly can.

B. EDITOR ROLES

How to direct others' think tank productivity

You may not be a sole author. You may head a think tank team. You may need to coordinate a coauthored output. This adds an editor role. As an editor of others' writing, you may wear several hats. You may resemble an author, a teacher, and a coach of a team. You have a chance to upgrade the quality of manuscripts which others compose, now and in their future projects. You may be a catalyst to orchestrate and integrate several parallel or mutually supportive projects. Your editor role thus is much more than that of an English professor in "Composition 1." Read on.

1. Meaning. Authors usually know what they mean. Their readers may not. But authors may not express themselves clearly. As an editor you have a bridgebuilder role. You may have to protect readers from authors' blind spots or deficiencies of expression. You may need to shorten and sharpen some sentences that don't perform their mission. But you can't do much of that. It is better to show the authors HOW to do it for themselves. A little instruction by spot checking and correcting a few case examples of deficiencies may be all they need to correct the others themselves.

2. Style. Authors vary greatly in style, artistry, value feelings, or emotional effects they produce. You as editor have your own intuitive reactions to their styles. You may spot some wordings that might annoy readers or offend certain reader audiences. Your role is not to make them all walk in your emotional shoes. But you may sometimes protect them from some things that would offend readers unnecessarily. Or you might see ways to make the authors' messages more appealing. The public relations part of your editing may be as important as the linguistic part.

3. Perspective. Your editorial overview of the whole is a major responsibility. This includes the relation of the parts to each other and the whole. Check for consistency, parallelism, sequence, and flow. Are formats uniform throughout? Does it hold together? Is its architecture as good as its carpentry? Is it a message or a miscellany?

4. Technology. Authors are not always aware of all the constraints involved in printing. They may prepare copy that will be difficult or costly to print. For example, not many printers can print it in STRIPED INK. Your knowledge of the equipment and processes for reproduction can be helpful here.

5. Need for a think tank team. We in the think tank teams at USC and in the Dayton area believe many large organizations need a special kind of RESEARCH AND EDITORIAL TEAM. Such a team might be a nucleus, focal point, or center of a network for all such work as this book describes. It could

perform a clearinghouse function for projects based on the Crawford slip method. It might help to conceptualize and design targeting for workshops to be run at distant branches, offices, bases, or locations. It might process slips sent in from such workshops. It might develop manuals or project plans based on those slips. It could cut lead times and increase mutual aid between many projects that have similarities. It could do many things which lone thinkers can't possibly do. Such a central body could include a mix of researchers, editors, authors, and essential support services. All would rapidly acquire a coordinated momentum in think tank technology and implementation of its results. The data bank of processed slips would become an increasingly valuable asset.

6. Team members. Since problems are many and varied, diversity of expertise is needed in the think tank team. Since many problems are interdisciplinary and interlocked, team activities will require much mutual aid. The Crawford slip method can assist greatly in merger of specialized know-how into interdisciplinary projects, programs, and training materials. Members can qualify through good performance in workshops and their follow-up. Those with talent, dedication, and think tank skills will survive. A part time relationship may grow into full time, or the reverse. Growth and development will result from internship with experienced ones. The team has great potential for both professional growth for its members and service to the nation.

7. Team facilities. Your think tank team needs a better place to work than a crowded office shared with six others. Table top surface is needed for processing slips. There may be cabinets to hold slip classification trays. You may need shelf space for slip boxes in your rapidly growing data bank of professional and technological know-how. You will need access to typing, word processing, duplication, computer services, and printing.

8. Consultant roles for the team. Your think tank team may be the trouble shooters, diagnosticians, brain trust, think tank, fix-it crew, ombudsmen, problem solvers, or consultants for your own or other organizations. It may be like a medical clinic, emergency room, or hospital for various "illnesses" in work, management, or technology. Each problem solved can add new think tank capabilities for brainpower mobilization for the later ones.

9. Marketing roles for the team. Team members may be missionaries, salespersons, or marketers as well as diagnosticians and healers. In many of the in-house functions that are most in need of help, the people may not realize that they need it. Problem solvers within a company or agency need to be SALESPERSONS, much as if they were consultants in private practice.

10. Relation of editorial team to management. Your team has a STAFF role. Line authority would be inappropriate. You need full management understanding and support. Line authorities must need and want your help. They must believe you can help. Your results must justify that faith. Otherwise you will soon be out of clients and out of business as a team. Your top management is your main client. Without an institutional commitment you cannot long exist.

11. Confidentiality factors in an editorial team's work. The need for anonymity and privacy of diagnostic slips may be your biggest difficulty in

in-house team operations. People are afraid in two ways: a) They fear to criticize existing ways and risk reprisals from superiors. b) They fear to ask for help on their own problems lest they be thought unqualified for their jobs. This fear is an especially big factor if your editorial team is within the employing organization. If slips are processed in your think tank center in such ways that handwritings are recognized or privacy is violated, your whole team function may be seriously impaired. Outside consultants have some advantages over in-house think tanks in this respect. If you can't guarantee that privacy, then say so and don't make promises you can't keep. Even then, you have the advantage over oral methods because slips preserve INDEPENDENCE of inputs, even when anonymity and privacy are impossible.

12. Procedure writing as a major team service. PROCEDURE WRITING is a major way to solve the confidentially problem. It begins with independently made first drafts. These are objective and do not involve criticizing anybody or confessing any inabilities. It proceeds in the improving stages by face-to-face mutual aid between individuals. It ends with SIGNATURES, taking professional responsibility for what was written.

Procedure writing skills are easier for team members to acquire than are the diagnostic and remedial manual writing skills. Procedure writing renders a greater service to your client unit because of the deeper penetration into the practical realities of tasks. We favor giving procedure writing a high priority in your team training and in its applied operations. Such procedure writing demands a particularly precise editorial direction. Fortunately those editorial skills are fairly easy to teach to persons who have the other needed qualifications.

C. PUBLISHER ROLES

How to get think tank outputs distributed for implementation

Unseen means unused. Why compile it and bury it? Publication is a major step toward implementation. Read on.

1. Publication as marketing. Printing is only a fraction of publishing. The printer produces a product. The publisher sells it. But when you publish you sell more than bound sheets of paper. You sell the MESSAGE that is on that paper. You did your think tank project to accomplish a purpose or mission. Your publication is a tool to help achieve that purpose. It may be more profitable to GIVE the publication away than to try to sell it. To sell paper merely for a commercial profit may miss your main point. Your real marketing task is to sell PRODUCTIVITY or IMPROVEMENT in the activity about which you have written. Many professional journals might welcome your message and greatly aid your mission.

2. How many copies. How many listeners should a missionary invite to a meeting? Make all converts you can. Reach out. The more readers you can get, the more change you can make. The first copy costs the most. The law of diminishing costs is a big factor in publication. It applies in very different degrees according to the type of processes you choose. But a large reader audience is needed more for IMPLEMENTATION than for cost reduction.

3. In-house publication. Improved productivity begins at home. Your typical think tank project is on an in-house problem. Your reader audiences and potential implementers may all be within your own organization. They may all be within a single department. Your aim in publishing has to determine

your market for copies. Publication costs are well justified by the in-house mission. Your think tank activities may have involved only SAMPLINGS of the organization's personnel. Publication enables you to reach and serve all the others like them. Unless your organization is very large, this total reader audience may be small. Modest and low-cost reproduction may be entirely sufficient. It may be supplied free to the proper personnel as a part of the ongoing operations.

4. Required reading. Study of your published materials may justifiably be required as a part of personnel training functions. This may be especially true of standard procedures you have developed for troublesome tasks. People may well be required not only to READ and STUDY the right steps for doing critical tasks, but to DO tasks in the specified way. This is obviously true of some tasks in a nuclear power plant or in an airline repair shop. How far should the same concept be carried down to printed guidance of tasks that are a bit less critical?

Publication of some of these REQUIRED procedural directions may take many form. Directions need not all be in book or pamphlet or sheet forms. Some may be posted over specific desks, benches, or work places. Some may be printed on labels of bottles or instruments. Your automobile gas tank may bear printed directions for UNLEADED ONLY. Publication may take many forms, in many shades of required compliance.

5. Mode of reproduction. Whether you go for the printing press or the office copier or a videotape can depend on your mission. This is usually a utilitarian one that can be well met by plain paper and low-cost duplication. It may, however, justify slick paper and prestige printing, with lots of expensive pictures. Proceed with caution and under control. It is easy to become obsessed with a message and overdo the publication. Don't let your pride in publication exceed your dedication to productivity. Fancy printing should not use up funds needed for better purposes.

6. Copyrights. Copyrights mean less since the coming of instant print shops in every community. It is hard to keep people from duplicating or plagiarizing what you copyright anyway. There are many good reasons for copyrighting some outputs that have commercial value or proprietary ownership aspects. But for some of your outputs your aim is to fulfill a mission rather than make profits on sales of copies. You may welcome and invite readers to duplicate copies they get from you. That may be a way to get their help in your mission.

7. Commercial publishers. Some in-house projects are on problems that are nationwide. Your situation may be quite typical of that in other organizations. What meets your local needs is therefore transferable, hence worthy of national publication. If you want to reach that larger market, you may need an experienced and established national publisher. The publishing business has changed greatly in the last two decades. The trend is toward specialized publications. Select one that is most appropriate for your study. There are probably several. It is not as easy to succeed in publishing as you might think before you try it. But don't go for nationwide publication if doing so will water down or generalize your message so that it does not serve your own in-house purposes. It is sometimes best to do both, with in-house publications as the first stage.

D. MANAGER ROLES

How to get action on think tank outputs

Management implementation of a new program may have to run a gauntlet. A variety of opponents may attack you, some from hidden motives. All your fine work may get kicked off into the weeds. Following are some tips from others' experiences.

1. Staff versus line responsibility for implementation. Think tank analysis of a problem is typically a STAFF function which you do to help a LINE authority. In that case the managers are your clients and responsible for implementation of solutions you develop. So you analyze all the factors, make recommendations, present the pros and cons, and leave the managers to do the rest. Or do you?

Perhaps you are a manager and don't have a staff helper who can use the Crawford slip method. Then you are wearing several hats: manager, analyst, author, editor. Whatever the management books say, lines may be blurred. So let's assume that you have only the staff role.

If you deliver your product in a take-it-or-leave-it spirit, overworked managers may have to leave it. They may not have the time or inclination to battle for its survival. They have enough battles on their hands already. They may not understand the fine points of your plan well enough to defend it. They may prefer you to sell it, or if necessary fight for it.

If you take on the burden of the battle, you may get shot at by both sides. You may inherit some of the existing animosities about other matters that relate loosely to yours. You may do the managers a favor by drawing away some of the fire they are under. You may need much wisdom to decide how much to get involved.

2. Foresight and preplanning. Your role as a staff analyst is to help and protect your client managers. So try to foresee and prevent the troubles they will have in doing what you recommend. A sound plan is easier to sell and defend than a bad one. Foreseen oppositions or opponents are easier to deal with. Your troubles-and-remedies slips can alert you to most of these. The quality of your slip processing can affect the acceptance of your plans. Your workshop people have given you the benefit of their insights. You have given time for thoughtful consideration of all these factors. You can and should build into your document the sales message it needs for survival.

The precision level in what you submit can make a big difference. The "general idea" may not be good enough. If the details are left to the managers, they may not have the time or available data to supply them. If you can recommend a fully operational plan, one signature by the right executive can put it into operation. But if you overlooked something and your plan fouls up, off goes your head.

3. Power of persuasion. Problems and projects that are complex enough to justify think tank treatment may not be easy to explain. Some managers are overconfident about their own powers of instant wisdom. Many who must be persuaded lack the time to listen to or read long explanations. They may not really know what they are rejecting.

For such reasons it is VERY important for you to cultivate the art of readable writing. If you can't write it clearly, you aren't likely to do any better in a ten minute presentation of a ten week analysis. We repeat our emphasis on short words and sentences and on STRUCTURED presentation of your

message. A steady stream of unbroken speech, or pages and pages of paragraphs without underlined or centered headings, can leave managers bewildered. They are not likely to authorize and implement what they don't understand.

4. Gradualism. What can't be swallowed as one lump may be served in bite sizes. Glimpses and previews and trial balloons are standard in the public relations profession. Some ideas take time to ripen. Informal contacts may alert you to trouble ahead in time for you to meet it. Plans that are UNDER STUDY can be withdrawn before they are rejected. It is better to have your trial balloon shot down than to have a year's work disregarded. Much can be learned about the "art of the possible" by reading about legislative and political events of the day.

5. Involvement of the implementers. Your biggest asset in getting acceptance and implementations is your having had a cross-section of the implementers writing slips for you. What they write about their needs helps you to meet their needs. Their complaints about present ways tell you what to offer as better ones. Their slips alert you to the pressures, polarizations, and emotional undercurrents your plan will face. The step-by-step procedures which they write, agree on, sign, and get adopted are already well along toward implementation. Their involvement in producing your plan strengthens their commitment to its success.

E. EVALUATING IMPLEMENTATIONS

How to diagnose and improve ongoing activities

Two questions arise when your plan goes into action: a) How good is it? b) How can you make it better? Evaluation can help you to refine your implementation efforts. This is true whether you are a lone implementer or part of a team. It is especially true of plans that are complex. Their success may be hard to measure. The Crawford slip method can make evaluation easier.

1. What to evaluate. The Crawford slip method is applicable in a wide range of evaluations, critiques, or appraisals, such as: a) Individual job performance by workers or managers. b) Specific products or outputs. c) Specific functions, disciplines, or areas of activity. d) Specific projects or programs. e) Specific training courses or classes. f) Specific meetings, conferences, or conventions.

2. Focus on troubles. Evaluation is not an end itself. It is to guide remedial actions. Evaluate selectively. Identify the deficiencies, shortcomings, or imperfections. A relatively few parts of an activity cause most of the trouble. Look for these troublemakers. Apply remedial effort selectively. Get slips on the "symptoms of illness" as perceived by those involved in the implementation.

3. Evaluators. Who is best able to appraise a product or process or operation? Pooling ignorance is unlikely to produce wisdom. Select knowledgeable evaluators. Usually there is no one person who is qualified for a total appraisal. An activity or program may have many highly specialized components. Specialists can appraise from different vantage points. You may need representation from many different segments or professions. These segments or specialties may be highly interdependent and interlocked. Values

may be quite different on the two sides of an interface. Judgments from both can supplement each other. These critiques can be obtained from many people in a short time by the Crawford slip method.

4. Precision through analysis. A total SCORE may not reveal the troublesome PARTS. A LUMP evaluation may yield little remedial guidance. To rate a patient as SICK doesn't identify the needed medicine, whether the patient is a person or an operational program. Evaluation may need to be highly ANALYTICAL. Some must penetrate to minute details. Generalities are not precise enough to guide remedial actions. Useful diagnosis must tell what part is imperfect and in what specific ways or WHY. This analysis may need to go to the minute steps within some very specific tasks before you find the real culprit that is causing the trouble. You may need analytical equivalents of the biologist's microscope. The Crawford slip method is a step in that direction.

5. Procedure writing as an evaluation tool. It is hard for you to judge how well a task was performed if you have no agreed-on standards of expectation. How can you measure quality of performance before you decide how the tasks should be performed? Carefully prepared written step-by-step directions for a task can be your checklist for examining each of its components. With such a checklist a first line supervisor can inspect and correct the specific task performance of subordinate workers. Those workers can check and correct themselves or each other. Some tasks in complex and high-technology activities MUST be done right. This requires regimentation and detailed inspection and enforcement. To leave such tasks to the "creativity" of new personnel is overdoing the job enrichment concept. It is over-challenging and may be risking failure or catastrophe.

6. Rating scales as evaluation tools. The "BIG LUMP" is too big a unit for precise rating. The whole might be judged by some one attention-getting part. Rating scales seek to reduce the whole to more manageable pieces. These pieces may be few or many. They may be abstract attributes and qualities or concrete activities. They may or may not be mutually exclusive and all inclusive. They are often armchaired by someone who is thinking on a generalist level. They may be designed for judging a wide range of activities, hence not very ACTION-ORIENTED for any of these. Slips from "troubles-and-remedies" workshops can give us the added penetration and action orientation which so many of them lack. Step-by-step written procedures may be your best rating scales for judging specific task performance. The specificity levels in your rating scales must depend on what you are evaluating and for what purpose.

7. Subjectivity factors. Don't go completely overboard for objective measurement. Some of the most objective and easily measured features of an activity may be least relevant to values involved. Some of the less tangible impressions or feelings of your workshop people may help you to find the remedies you need. Even though these may be embryonic or infant insights, they may develop into something better. Suggested remedies may be submitted to a group for checking as sound or unsound, or as good, fair, or poor.

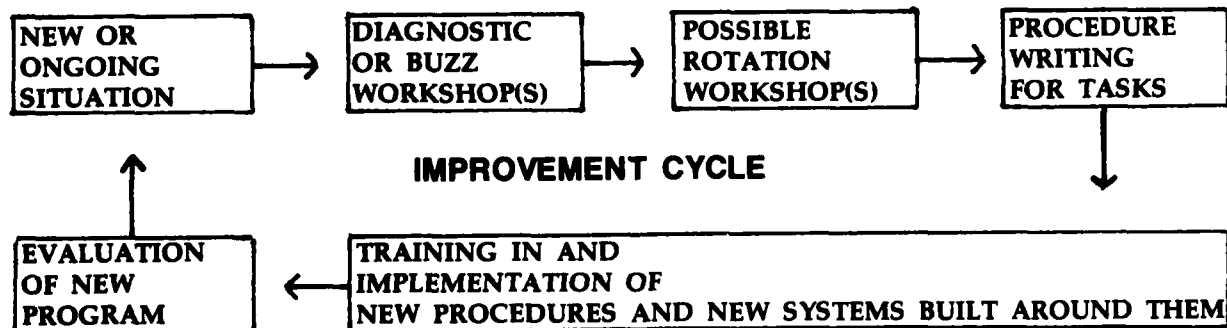
The medical analogy applies in many ways. The subjective appraisals of "what hurts" or "where it hurts" or "what it feels like" can suggest what x-rays or laboratory analyses are needed. They are PRE-COMPUTER leads. Your slip inputs are QUALITATIVE analyses. They can help you toward far more

objective error counts, statistics, or mathematical refinements and verifications. They lie about halfway between instant wisdom and scientific proof. They may be a "half-loaf" which is far better than no bread. But don't let that stop your quest for the whole truth, the exact truth, the PROVEN FACT, the proven BEST WAYS.

* * *

Learning activities for Chapter 7

- a Write and get editorial checking of one unit of something you are authoring
- b Do a thorough mental low gear analysis of how to create a think tank team within your organization
- c Plan one unit or a whole design for a training manual derived from your chosen project
- d Plan the long term implementation of your chosen project
- e Get all the above checked and improved by others



CHAPTER 8. CASE EXAMPLES

SOME MODELS TO AID YOUR IMPLEMENTATION

Your targeting is probably the most critical factor in your implementation of think tank projects. In a sense it is like the aiming of a hunter's gun. Your hits can hardly be better than your aims. Your research results can be little better than your research designs. This chapter gives you some snapshots that may trigger your own creativity about targeting. The great DIVERSITY of the cases can fire your imagination.

A. SOME SUCCESS STORIES

(Some more successful than others)

Parts of this section are written in the first person. Many episodes are chips from the C.C. Crawford woodpile, or from my "multipliers." They are told largely from my memory or from accounts or outputs of those I have influenced. Some are from years or decades past. Their DIVERSITY accents your need to attack each problem in its own right. Seldom are two alike. You may need to ADAPT or INVENT research designs more often than you can REPEAT any of these. But these models will beat blank paper as starters.

Dr. Demidovich found me in 1979. Our think tank technology advanced by leaps and bounds as we collaborated. His vast Air Force and civilian involvements enriched this technology enormously. He has a genius for making things happen. More recently my own university, USC, has involved me in very challenging roles. Some of these cases are from our two USC teams in the USC Institute of Safety and Systems Management and the USC School of Public Administration. I hope you who read our book may multiply and refine what we have begun.

1. Arson investigation. Raymond L. Straeter wanted a textbook for his USC arson investigation course. He was in charge of the Los Angeles City Fire Department's Arson Bureau. Diagnostic slips from his 30 investigators yielded the table of contents. Two rotation workshop sessions fed their answers into those chapter categories. The chapters filled 152 pages of his textbook. He taught it for years. He sold it to classes in other universities. He reprinted it several times.

2. Attack bomber. The Douglas Aircraft company's A-26 plane was behind schedule for D-day. The need was for greater PRECISION. Slow-plane tolerances were not good enough for this fast plane. The trainers sought USC help. A 45-person workshop supplied the slips. From each of 15 work fields came a top, middle, and lower level person. Top people wrote on green slips, middle on yellow, lower on white. Each slip was coded by work field, 1 through 15. Swing shift slips identified the troubles and remedies. The night shift processed the slips. The day shift made and cleared decisions and started corrective training. The whole analysis reached action in 24 hours. That was wartime. People were in a hurry in those days.

3. Building inspection. The International Conference of Building Officials asked the USC School of Public Administration for help in training building inspectors. We gave a two-week intensive seminar to building officials of many states. We wrote and classified our slips right there in the seminar room. We pooled ideas for needed photographs, drawings, blueprints, etc. The manual told inspectors exactly how to inspect each part of a construction job at each stage of the work. Since the editors and

publishers were in the seminar, the follow-up work was all theirs. The book came out in hard covers on slick paper, a beautiful job.

4. Chemical product. Robert L. Zambenini had as a consulting client a manufacturer of heavy industrial equipment. They needed a new sealant for attaching cylinder heads. Twenty multidisciplinary people wrote hundreds of slips to define, design, or plan that sealant. After writing warm-up slips on six targets, they cross-fertilized in groups of three. Then they all compared, consolidated, agreed, and made a recommendation to management. Since management was in the 20, action was prompt. The new sealant was in production within days. Since all disciplines were involved, all were committed to its success.

5. Civil defense management. Dr. John D. Gerletti and I were asked to help train civil defense officials after Russia achieved the hydrogen bomb. We toured California for five workshops of about 60 officials each. We had the first half of each morning and the last half of afternoons. Lectures by other researchers came in between. Targeting was PROGRESSIVE. Each group wrote slips on targets that had emerged previously. Our 10,000 slips became 256 pages of "Civil Defense Management, California Supplement." There was a 32-page appendix of step-by-step procedures for critical civil defense tasks.

6. Combat instructor school. During the Korean War I helped the Air Training Command rewrite a manual on "How to Instruct." Then they asked me to appraise fighter pilot training at Luke Air Force Base. Next was Randolph Air Force Base and a course on "How to Instruct" for all nine combat training bases. It was to prepare faculty for the FUNCTIONAL or HOW TO way to teach combat skills. It was a move away from the too-informational instruction I had criticized. This instructor school at Randolph continued until the whole defense effort was reorganized following the Korean War.

7. Complexity crisis. The Society of Logistics Engineers (SOLE) invited me to demonstrate the Crawford slip method. I took along some of our faculty team from the USC Institute of Safety and Systems Management. Our over-all target was "How to close the gap between high complexity and low productivity." We got hundreds of slips from 37 professionals. Those team members processed the slips a few days later. One team member, Frank Buzard, was teaching a systems management course at the Air Force Space Division. We used the SUBPROBLEMS from the SOLE workshop in a rotation workshop for the Space Division class. Slips from SOLE and Space Division were combined for one feedback report.

8. Cost estimating. Robert L. Zambenini got slips from 30 professionals in several departments of an electronics factory. These revealed many factors to safeguard cost estimates and streamline the estimating. The feedback of the composite was so helpful that more people's inputs are being planned. It became clear that disciplinary inputs can prevent serious errors about cost figures for major project proposals.

9. Counseling student veterans. Florida Technological University had 1,300 student veterans enrolled. Twelve veteran counselors were overloaded answering questions that often repeated. I spent 11 days there under a Cranston Act grant. We got the questions on slips from: a) Counselors. b) Veterans. c) Faculty. d) Representatives of 26 governmental or public agencies. We got agency people's answers to the main questions that came to

each. We printed a "Veterans Counseling Syllabus" with those answers. A major part of the agency counseling could then be done in one evening in the auditorium during orientation week. The truly unique problems could then get better attention from counselors who had more time free.

10. Cuban education. The U.S. State Department sent me to Cuba two summers, 1952-53. I taught at the University of Havana. Each time I had 30 teachers ranging from kindergarten to university. My course was called "Functional Education." Each person wrote a functional or action-centered unit for the Cuban curriculum. They wrote slips for each other. They got slips from others with whom they had contacts. They put it all together in our apartment during the last week while the university was shut down after Castro's premature "revolution." It all died in the political events that followed.

11. Dayton as the "City That Thinks." Dr. Demidovich got hundreds of slips from 100 community leaders of the Dayton area. The target was "Community problems and concerns in the Dayton area." He used the buzz workshop format. He called it WOW (Written, Oral, Written). First they wrote warm-up slips to get each one's INDEPENDENT insights about Dayton's problems. Then they buzzed in groups of three to cross-fertilize. Then each wrote "sum-up" slips to RECOMMEND what problems to attack seriously in future meetings, or what to do about such problems. Sample slips were later read in a TV broadcast, as conditioning of Dayton citizens for later meetings.

12. Death and dying. The First Baptist Church of Los Angeles asked for a seminar on death and dying, for the large senior membership. Meetings were weekly for two hours. Average attendance was about 100. Weekly targets were: a) Psychological preparedness. b) Financial preparedness. c) Funerals. d) Morticians. e) Ceremonies. f) Grief and renewal. Slips preceded and formed the basis for oral activities each day. Spin-offs were seminars on wills and estates and on courtship and marriage in later life.

13. Dental Association. Attendance at meetings of the Southern California Dental Associations were averaging about 35. Dr. John D. Gerletti's dentist was the program chairman. They collected slips on the live problems dentists wanted dealt with in meetings. These were classified to provide a sequence or progression. Attendance increased to between 250 and 300 as a result of the new kinds of programs.

14. Firefighter education. Dr. John D. Gerletti collected slips on the problems of firemen, for a B.S. degree program at USC School of Public Administration. Courses were offered in each of the main fire fighting activities. Attendance rose to 800 during the organizational build-up. After the program got going, it was moved to Santa Ana College. Enrollments run about 2200 there.

15. Fire prevention. In 1951 fire and civil defense were of great national concern. Dr. John D. Gerletti enlisted the help of the International Association of Fire Chiefs for a USC Curriculum Laboratory project. We got slips from fire department people and from educators. We wrote a course syllabus to inject fire prevention education into existing courses in each branch of the high school curriculum. Teachers and fire experts combined ideas for content, activity assignments, tests, rating scales, and even line

drawings to illustrate it all. The 64-page syllabus was published nationally by the Association.

16. Hong Kong. Dr. John D. Gerletti was engaged for a three day seminar for 34 training officers who head up the training of 160,000 Hong Kong civil service personnel. His first hour was for a needs assessment. Then all 34 joined in classifying the slips to plan agenda for the seminar. They moved through the outline one problem at a time. Answer slips for target problems became the content for training. The seminar closed with instruction in how to continue what had been begun.

17. Life adjustment education. Ethel Cooley, C.C. Trillingham, and I decided to co-author a textbook for high school students. The aim was to give GROUP guidance about study, school life, and social living. Cooley was a high school teacher. Trillingham was Los Angeles County Superintendent of schools. Between us we could get slips from almost anywhere. Diagnostic slips and remedial content come from: a) Teachers in my education courses. b) Students in Cooley's high school. c) Parents in audiences which Trillingham addressed. We classified a few thousand slips into 14 chapters and about 180 chapter sections or daily lesson units. I dictated the paragraphs for the book during the Christmas holidays. Teaching-and-learning suggestions, readings, etc., were assembled for the 180 units. The text was published in 1940 by D.C. Heath and Co. A 1953 revised edition was prepared by Dr. Emery Stoops. Life adjustment education disappeared after the Russian Sputnik circled the earth. Is the present crime wave at all related?

18. Love in later life. For the First Baptist Church seniors we ran six weekly all-day sessions on "Courtship and Marriage in Later Life." Each half day was on a different subproblem, such as: a) Criteria for selecting a partner. b) Making contacts. c) In-depth acquaintance. d) Romance vs. practicality. A typical format was the BUZZ sequence: a) Warm-up slip writing on the target. b) Oral buzz in groups of three or four. c) Sum-up slips to reflect the new insights. d) Consolidation by guest resource persons. The seminar led to an ongoing "Senior Singles" organization that met for years. As with all such efforts, we had more women members than men.

19. Masters' theses. My thesis students at the University of Idaho needed more help than I could give in the office. I offered a course on "Scientific Method in Education." I started writing a textbook for it. I got slips from my mental low gear and from printed sources. Soon I was at USC with even more would-be thesis writers. We created a "Thesis Seminar." I finished my book on "Technique of Research in Education." No publisher wanted it because there was "no market." I published it myself. I sold out my copies for enough to build a house. Soon publishers had several better books out. I let mine go out of print too soon.

20. Mortuary regulation. The Federal Trade Commission undertook to curb mortuary exploitation of bereaved families. The consumer-oriented funeral society people asked me to help. We got slips from workshop audiences at churches and senior centers. I ran a workshop for 16 social workers who knew much about families that went on county welfare after extravagant funerals. I gave my data as testimony in the FTC hearings. Some quite moderate regulations were adopted by the FTC. A powerful mortuary lobby got Congress to veto most of these.

21. New product. Robert L. Zambenini is President of Diamond Consulting Group and also a part time USC professor of systems management. For a midwest client he assembled 20 people from engineering, marketing, finance, product distribution, law, and staff support. He explained briefly the methodologies for product requirements and product definition. Then he got slips on six aspects of the new product the group was to develop. Then they went to breakout rooms to combine ideas, in groups of four to seven persons. Then all met to reconcile ideas from the buzz groups. The final product that resulted was made better by the wealth of multifunctional information that went into its design.

22. Nursing home administration. Dr. John D. Gerletti and I had a grant to "improve nursing homes." Los Angeles County's Rancho Los Amigos Hospital was the institutional setting. We toured the state for two weeks for diagnostic workshops in about ten places. We built the table of contents from those slips. Then we toured again for answers. We mimeographed the manual with requests for corrections. Critiques came from doctors, public health officials, and a wide variety of those involved. The Attending Staff Association printed 5600 hard-bound copies of a 480-page text, "Nursing Home Administration." They had about 700 left over when medicare made parts of it obsolete.

23. Paramedics. The University of North Carolina had a grant to set up a major training program for emergency medical services for the state. The focus was on the organization and management of the program. Drs. John D. Gerletti and Kathy Loewy used slips for needs assessments in several areas of the state. Their training outline is now used in institutes throughout the state. The program is getting national attention. An additional grant is to subsidize attendance.

24. Police training. Dr. John D. Gerletti was teaching the Crawford slip method to policemen at the USC Delinquency Control Institute. A police sergeant, Ed Davis, liked it. He and Gerletti proposed its use to train the whole 4,000 Los Angeles police force. The City Council put Ed in charge. They got slips from police on what they needed to be taught HOW TO DO in police work. Examples were: a) How to broadcast for help while chasing a fleeing car. b) How to check for pickpockets in a crowd. Soon 4,000 police personnel were getting the 15-minute "lessons of the day" when they reported for work. The program went on for years. Ed Davis went up the ladder. He served many years as Chief of Police in Los Angeles. He is now a California state senator.

25. Political feasibility. Dr. Robert M. Krone took me as guest professor to his two classes at Vandenberg Air Force Base. Our over-all target was how to get recommendations acted on and implemented after investing all that scientific and engineering energy in them. We already had diagnostic slips on "political feasibility" from March Air Force Base. The subtargets from the March Air Force Base diagnosis were used as rotation targets at Vandenberg. The whole sequence was videotaped for possible use in teaching the Crawford slip method.

26. Production control. During World War II I hired on as a shortage chaser at the Douglas Aircraft Company's El Segundo plant. Soon I was writing the production control manual for the dive bomber assembly line. Diagnostic slips identified about 80 troublesome tasks that needed standardizing.

Procedural directions came on slips from the 38 best experts in the plant. The finished manual was minutely checked for both technological and security factors. The dive bomber contract was canceled after the battle of Midway, before the manual was printed.

27. Productivity improvement. A large midwest corporation wanted its subordinate units to start productivity improvement programs. Robert L. Zambenini, as consultant, got 20 top managers to write slips to identify problems. Then they buzzed in group of three to exchange viewpoints about remedies. The whole process was videotaped. This videotape was used to direct similar sessions in other places in the company. Slips from all these sessions were mailed to California for processing as an expanded data base. The project continues with slips on remedial solutions to productivity problems.

28. Psychological rehabilitation of the catastrophically disabled. Dr. Leonard V. Wendland was Chief of Psychological Services at Rancho Los Amigos Hospital. He got a grant from the Vocational Rehabilitation Administration. He assembled psychologists from rehabilitation centers in 11 western states. Meetings were all day for a week. Most of the time was for lectures, hospital rounds, and staff conferences to integrate insights about specific patients. I had a minor think tank role intermittently during the week. I mobilized know-how on psychological aspects of the rehabilitation of catastrophically disabled patients. Slips came from these psychologists and also from several kinds of professional disciplines within the hospital. My feedback report was one part of a collection of taped lectures and submitted papers.

29. Quality circles adaptation. Demidovich ran a three-hour seminar for executives in NAPIM (National Association of Printing Ink Manufacturers.) His topic was how to adapt the Japanese quality circle model to large or complex or management level activities under high turnover and urgent deadlines. He explained the Japanese way during the first two hours. Then all wrote slips on "How to fit quality circles into your organization." Then they formed 3-person buzz groups to discuss "How to combine slips and oral exchange to improve important activities in your organization." After 15 minutes of this cross-fertilization they each wrote their own well considered recommendations regarding the Crawford slip method as a quality circle adaptation. They really liked it.

30. Senior centers. The Area Agency on Aging made a grant to improve operation of multipurpose senior centers. I was called in after most of the money was spent. We ran four regional workshops in the sprawling Los Angeles district. In three we got slips from administrators of the centers. The fourth was for local federal levels. Two major problems emerged: a) Dangling decisions. b) Polarized or adverse interests between federal authorities and local sponsors of centers. The federal enabling act was a recent one. It was in general terms, with details nebulous. Decisions were both hard to get and often ambiguous or unstable. Our feedback report suggested a way to stabilize these.

31. State agency. Some USC professors had a contract to examine a troubled state agency whose head was not being very receptive to criticism. A meeting with the top 25 managers was set up. But among these was one who was very close to the agency head. To get frank inputs the professors used slips.

The problems were revealed and easily prioritized. They were dealt with as problems, not as ideas of individual managers who surfaced them.

32. Study methods. In 1921, I learned the think tank principle from Dr. W.W. Charters while I was an instructor at Carnegie Institute of Technology. I was teaching a class in how to study. I needed to write a text for my course. We got inputs by interview. We took notes on sheets. I wrote mine on BOTH sides of note paper. I learned later that organizing was by cutting and pasting STRIPS of these sheets. I could not cut my two-sided note sheets into strips. Even one-sided notes were hard to organize for a book. By 1925 I was a professor at the University of Idaho. I still had no textbook on how to study. I had a drawer full of notes on sheets. In desperation I had the printer cut Crawford slips. I copied ideas from sheets to slips. I classified them for chapters. I subclassified for sections and paragraphs. I dictated the book in the summer of 1925. It got me my USC professorship in 1926.

33. Teleconferenced direction of a workshop. Fifty professionals assembled at Kirtland Air Force Base, Albuquerque, from bases far and wide. Demidovich got hundreds of slips from them during a 105-minute WATS line hook-up from Wright-Patterson Air Force Base, Dayton. The room had a voice amplifier, plus a talk-back microphone. Major Tony Cardona was room monitor under Demidovich's telephoned directions. He controlled access to the talk-back microphone by workshop members. They not only wrote hundreds of slips on a very technical problem. They had a question and comment interchange with Demidovich. The slips were mailed to me for processing. My report went to Major Cardona at Andrews Air Force Base, Maryland. Small world!

34. Telephone switchboard. The Los Angeles County central switchboard was hopelessly overloaded. A better one was impossible until a new building opened 18 months hence. Those 140 women were fighting mad, even pulling hair. I was asked to pacify them and hold the service together. There were seven lines of MANUAL material to guide them. One line said "No sticky chocolates at the switchboard." At the first workshop we identified about 80 problems. At the next, we mobilized answers. We got the answers checked by telephone experts for technological soundness. The manual was officially adopted as standard procedure. But even the best switchboard work was not enough. We had to teach 40,000 county personnel to handle their calls faster and better. We put their telephone procedure manual on 16 yellow pages in the county telephone directory. The situation quieted down. It held together until the new building opened.

35. Videotaped targeting. Robert L. Zambenini was videotaped while he ran a diagnostic workshop for a major company. The over-all target was how to improve operating productivity. The slip writers were from only one part of a very diverse and widespread organization. After Zambenini returned to California, others repeated his workshop with personnel in other places and other kinds of work. The videotape from the original workshop was used in directing the others. It enabled new workshop leaders to become "multipliers" of a technology they had so recently discovered. All these slips came to California for processing. They seemed equal to the first ones in quality of input.

36. Vietnam veterans. Leo Thorsness was "the best fighter pilot in the world for 92½ missions" in Vietnam. He was a prisoner in Hanoi for six years, then almost won the senate race against McGovern. He is president of the Southern California Chapter of Vietnam Veterans Leadership Program. The VVLP is funded by the government volunteer agency ACTION. Leo got one hour of workshop time when 17 chapters met in Washington. He used rotation targeting to get hundreds of slips on these veterans' needs and problems. Overnight classification and word processing produced a draft handbook for all conferees. These related to image improvement, self-help, and mutual aid. It was later refined and is now used throughout the country. He did all that between far bigger duties for Litton Industries.

B. SOME WORKSHOP TARGETING MODELS

Slightly "universalized" to fit a variety of situations

The first four models are of the open range diagnostic type. They invite almost any troubles or remedies anyone is aware of. The idea is to get a perspective of the whole before you bore in on any of the parts. You especially need that when you start a new operation. You need to learn much in a short time. People will gladly brief you. The workshop lets them do it at a rate of one idea per minute per person. That shortens your orientation time greatly. Qualified analysts can process the slips and give you a meaningful perspective in a short time.

These four models can also help you if you are in an ongoing operation that is not going too well. Are you stalled? Are you under pressure? Are your people discouraged? These four models show some ways to break through.

The rotation model is different. It illustrates a way to follow up a diagnostic beginning. It is a way to go deeper into the parts of the original problem. But it may still not go deep enough. It may still be on the general PROBLEM level of analysis. The real pay-off lies in step-by-step analysis of specific TASKS or INTERACTIONS. Our chapter on procedure writing tells you how to do that. We urge you to get down to that level of analysis as much and as soon as you can.

To sum it all up: If you are not mobilizing the full brainpower of those involved, you are working too hard.

* * *

Learning activities for Chapter 8

- a Review the success stories and dream up a dozen or more others for your own future
- b Write a few targeting sheets modeled after the few printed here
- c Get the above creative efforts checked by others, and keep on dreaming

DETOUR 
MANAGER AT WORK

PRODUCTIVITY IMPROVEMENT

HOW TO IMPROVE YOUR ORGANIZATION'S PERFORMANCE OF ITS MISSION (Targeting)

MOTIVATIONAL ORIENTATION (Seeking your help)

- a You each see the needs from a unique vantage point in the organization
- b The composite of all those perceptions can be better than any one of them
- c Managers and planners can't afford to be without them
- d They are especially needed by NEW managers, NEW missions, or new problems
- e The Crawford slip method is a good way to mobilize these
- f Your inputs are INDEPENDENT, not echoes of anyone
- g They are ANONYMOUS and PRIVATE, unseen in your handwriting within your chain of command (Don't promise this if not feasible to fulfill)
- h Write as freely and frankly as you can, as if speaking in a committee
- i Your inputs are LOOSELEAF, one sentence per slip, easier to classify
- j Please follow some precise directions so your slips fit into the assembly

DIRECTIONS ABOUT SLIPS (Very important)

- a Write LONG way, not across ends
- b Very top edge of each slip
- c Only one sentence per slip
- d To explain, use a new slip
- e Avoid words like IT or THIS
- f Write out ACRONYMS first time
- g Simple words in short sentences
- h For those outside your specialty

TARGET A. ADVICE ABOUT THE TOTAL OPERATION (Suggested improvements)

- a Imagine yourself as sole advisor to your managers or planners
- b Muster your best statemanship to advise them well
- c Alert them to needs or opportunities of which they may be unaware
- d Tell them what needs doing, and why, to improve the mission
- e REMEMBER: Long way, top edge, one sentence per slip, write out acronyms, simple words, short sentences, to people outside your specialty

TARGET B. WHAT PARTS OF THE MISSION ESPECIALLY NEED IMPROVEMENT (Major needs)

- a Think of functions or activities in most need of remedial attention
- b These may be in your own area or in other functions of which you are aware
- c Focus on the 20% of practices that cause 80% of the trouble
- d Help us to compile an inventory of components most in need of help
- e If time permits, write remedial slips to clip back of some of these

TARGET C. CRAWFORD SLIP METHOD APPLICATIONS FOR SPECIFIC SELECTED NEEDS

- a Recall your thought processes as you wrote the previous slips
- b Think of parts of the mission that need to be intensively analyzed BY SLIPS
- c Who might write slips about what, to improve any of the selected parts
- d How might you start such think tank analysis in any of those situations?
- e How might analysts best become qualified to direct such analyses?
- f How might "multipliers" be developed in your organization, for such think tank work as you have done today?

QUESTIONS ABOUT THE CRAWFORD SLIP METHOD RATIONALE

- a Pass up three questions (on three slips) about this think tank technology
- b These will be shuffled, divided in two packs, and used by two questioners who will alternate in presenting them for answering

P R E C I S I O N:HOW TO GET PRECISE PERFORMANCE OF TASKS OR INTERACTIONSMOTIVATIONAL ORIENTATION (Seeking your help)

- a Low quality and many errors drain budgets and cause much trouble
- b You each have some unique ideas on how to improve precision
- c Precision is no mysterious talent or gift of the gods
- d It comes from specific attention to specific tasks or interactions
- e You each know some spots where remedial analysis is needed
- f The composite of your unique insights can greatly improve your operation
- g The Crawford slip method is a good way to assemble all those insights
- h Your slips are INDEPENDENT, not echoes of anyone
- i They are ANONYMOUS, unseen in your handwriting within your chain of command
- j They are LOOSELEAF, one sentence per slip, for easier classifying
- k Please follow some specific directions so yours fit into the assembly

DIRECTIONS ABOUT SLIPS (Very important)

- a Write LONG way, not across ends
- b Very top edge of each slip
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- d To explain, use a new slip
- e Avoid words like IT or THIS
- f Write out ACRONYMS first time
- g Simple words in short sentences
- h For those outside your specialty

TARGET A. LOOSE TOLERANCES: What tasks or interactions to tighten up

- a What error-prone or substandard activities need more accuracy?
- b What specific errors or kinds of errors are you aware of?
- c Cite specific deficiencies of precision, anywhere in the operation
- d Be as specific, definite, and concrete as you possibly can
- e Put each shortcoming on a separate slip
- f REMEMBER: Long way, top edge, one sentence per slip, write out acronyms

TARGET B. PRECISION DEVICES: How to tighten up specific troublesome tasks

- a Cite specific remedies or work methods to stop errors you have identified
- b What would you do or have others do to correct those loose practices
- c Cite every precision device you know of, however small or specific

TARGET C. CONTROLS: How to make precision automatic or mandatory

- a What specific tasks should be required to be done in exact best ways?
- b How should best ways be discovered, agreed on, and enforced?
- c Suggest specific controls for as many tasks as time permits

TARGET D. CRAWFORD SLIP METHOD AS A PRECISION TOOL (Uses in your mission)

- a Recall your thought processes as you wrote the previous slips
- b Think of parts of your mission that need Crawford slip method analyses
- c Who might write slips about what, to improve your precision?
- d What arrangements are best for such slip writing?
- e How might you start such think tank work in your organization?
- f How might analysts become qualified to render such services?
- g How might "multipliers" be trained for such work as was done today?

TARGET E. ORAL EXCHANGE IN GROUPS OF THREE (Buzz workshop)

- a Imagine your three as the sole advisory committee on precision
- b Do NOT name a leader or recorder, nor take any votes
- c Share insights on the Crawford slip method for tightening up task precision
- d Trade ideas on how to use this technology in your mission

TARGET F. SUM-UP RECOMMENDATIONS (Your well considered advice)

- a Now imagine yourself as the SOLE advisor on precision in your mission
- b Write on slips the main actions you would take because of this day's session
- c Put your best statemanship into a few last sentences of advice on PRECISION

COST RAISERS:HOW TO REDUCE INEFFICIENCY, WASTE, ABUSE, AND FRAUD

NOTE: These workshop targeting notes can be used in hunting for leaks and losses in almost any kind of activity or situation. The motivational orientation, omitted here, can be tailored to the specific need in each case.

MOTIVATIONAL ORIENTATION (Omitted here)

STANDARD DIRECTIONS ABOUT SLIPS (Omitted here)

TARGET A. SPECIFIC INEFFICIENCIES (When best efforts are just not good enough)

- a Recall inefficiencies where you have worked or observed
- b Not necessarily in your own roles but including them
- c What actions or conditions raised costs unnecessarily?
- d Tell exactly what was done the wrong or hard way
- e Be as concrete and realistic as you can about each case

TARGET B. SPECIFIC WASTES (Little laxities or "little stealings" that get by)

- a Cite cases of acts known to be improper but done anyway
- b Not right or perfect but "good enough to get by"
- c Little lapses or fudgings that "everybody does sometimes"
- d Faults or infringements due to lack of full commitment or full control

TARGET C. SPECIFIC ABUSES (When negative feelings cause harm)

- a Cite attitudes or feelings that harmed something or somebody in the mission
- b What EMOTIONAL factors caused trouble?
- c What INTENTIONAL damage was caused?
- d Cite little or big abuses, up to vandalism or sabotage

TARGET D. SPECIFIC FRAUDS (Intentional deception for gain)

- a Cite cases of deliberate deception or dishonesty
- b Intentional trickery or personal benefit schemes
- c From very small up to swindling, embezzlement, or racketeering
- d Be as concrete and realistic as you possibly can about each case

TARGET E. TRAINING FOR DISHONESTY CONTROL (Dragnet for ideas)

- a Recall any instruction in college on how to reduce dishonesty or fraud
- b What have employers done about this management problem?
- c Advise colleges or employers on how to reduce losses from dishonesty

TARGET F. QUESTIONS ABOUT THE CRAWFORD SLIP METHOD FOR DISHONESTY CONTROL

- a Pass up three questions (on three slips) on how the Crawford slip method might aid in the reduction of losses from dishonesty
- b These will be shuffled, divided in two packs, and used by two questioners who will alternate in presenting them for answers

BUZZ WORKSHOP MODEL:HOW TO STIMULATE, RECORD, AND CROSS-FERTILIZE CREATIVITY ABOUT A PROBLEM

NOTE: These directions omit the motivational orientation, which will vary with each problem. Standard directions about slips usually apply. The chosen over-all title and subtitle should be worked out carefully. Then proceed as follows:

MOTIVATIONAL ORIENTATION (Fitted to your problems)DIRECTIONS ABOUT SLIPS (Standard directions unless there are special needs)WARM-UP BEFORE BUZZ (Collecting your thoughts about the problem)

- a You will want to look good to your buzz mates
- b You will want to have something worth saying to them
- c You may want some intelligent questions to ask them
- d Warm up your brain now by writing all good ideas you can on the problem
- e Put each on a separate slip, as explained in directions about slips
- f Include your very best ideas for solving the chosen problem
- g Turn in these slips before you go to your buzz location

BUZZ GROUP FORMATION

- a When signaled, form groups of three (Four if some are left over)
- b Try to match with buzz mates whom you don't know well, not close friends
- c Seek a corner where noise levels are best
- d Carry chairs if necessary
- e Be ready to reassemble when called together
- f Conduct the buzz as directed next

ORAL EXCHANGE DIRECTIONS (How to conduct the buzz period)

- a Don't name a leader or recorder, nor take any votes
- b Go clockwise for a one-sentence opener from each person
- c Allow no cross-talk until each has presented this one best thought
- d Then do free-for-all discussion in best ways you can
- e Teach and learn from each other
- f Stick closely to the chosen problem and ways to solve it

SUM-UP OR CONSOLIDATION AFTER BUZZ (Putting it all together as your advice)

- a Imagine yourself as the SOLE advisor on this chosen problem
- b Write on slips the actions you recommend for solving that problem
- c Write your OWN views, after comparing yours with those of the others
- d Do not try to summarize what the OTHERS thought about the problem
- e Put your best statemanship into giving sound and responsible advice
- f Leave decision making until after all slips are synthesized later
- g Turn in your sum-up slips to be merged with the warm-up ones
- h Workshop leaders may present some closing perspectives

ROTATION WORKSHOP TARGETING MODEL

NOTE: The chosen over-all target was "POLITICAL FEASIBILITY: How to get your ideas accepted and acted on." Dr. Robert M. Krone, USC Associate Professor of Systems Management, got hundreds of diagnostic slips from a graduate group at March Air Force Base. Those yielded the 13 subtargets below. Krone took Crawford for follow-up analyses at Vandenberg Air Force Base by over 50 space scientists, engineers, and managers. Since all started cold, they needed the standard motivational orientation and slip directions (omitted here). They had to learn to CODE each slip to match its target number. For that reason we had all write first on target 1 to stabilize slip format, procedure, and coding. The targeting notes which follow take it from there.

MOTIVATIONAL ORIENTATION (Omitted here)

STANDARD DIRECTIONS ABOUT SLIPS (Omitted here)

SPECIAL DIRECTIONS ABOUT SLIPS FOR TARGET 1

- a Write the CODE FIGURE 1 in very TOP LEFT corner of a slip, NOW
- b You will soon write one answer to target 1 along TOP EDGE after that number
- c Then you will write other answers on other slips, each coded 1

CONTENT DIRECTIONS FOR TARGET 1, "WHY SELL?"

- a Think of REASONS for using your best sales power to sell your proposals
- b Think of BENEFITS gained from better selling
- c Think of PENALTIES if your recommendations are rejected or ignored
- d Write your best SALES MESSAGE to persuade professionals to do better selling

ROTATION PROCEDURE FOR TARGETS 2 through 13

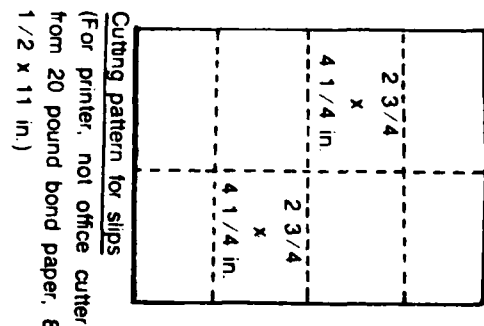
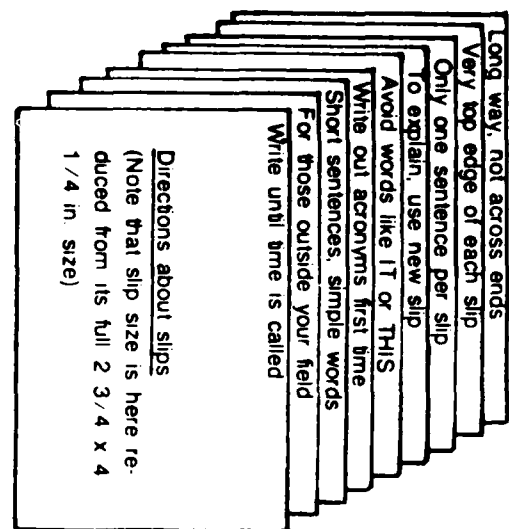
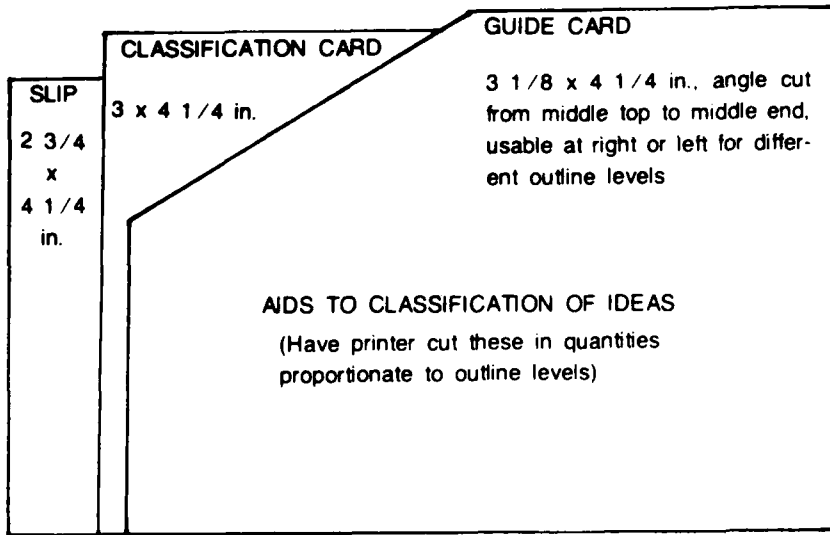
- a Count off for starting numbers, 2 through 13
- b Write intensively on your number, coding each slip by that number
- c On slowdown, do the same for the next larger number
- d If you finish No. 12, go back to No. 2 (No. 1 already done by all)
- e Keep slips segregated by number by criss-crossing sets
- f When time is called, assemble as orally directed

TARGETS AND CODE NUMBERS (Annotations about each target are omitted here)

- 1 WHY SELL: Why bother about how you sell your plans or decisions
- 2 RECONNAISSANCE: How to foresee reactions to what you will recommend
- 3 SOUNDNESS: How to be sure your recommendations merit acceptance
- 4 EDITORIAL FACTORS: How to put your idea into good form to submit
- 5 PRESENTATION: How to reach and convince deciders
- 6 COMMITMENTS FROM DECIDERS: How to nail down approvals
- 7 RESISTANCES: How to deal with those who oppose what you recommend
- 8 EMOTIONAL FACTORS: How to deal with non-rational factors and value feelings
- 9 DIVERSITY OF DECIDERS: How to adapt efforts to deciders' degree of unity
- 10 FLEXIBILITY: When and how to adapt, adjust, or compromise
- 11 ORGANIZATION: How to structure interactions for better acceptance
- 12 CRISIS LEVERAGE: How to hitch recommendations to crises or emergencies
- 13 RISKS IN RECOMMENDING: How to minimize risks or liabilities for decisions

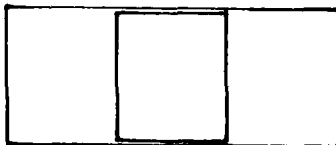
OPERATIONAL EXHIBITS

Reprint for separate use as paste-ups or projections



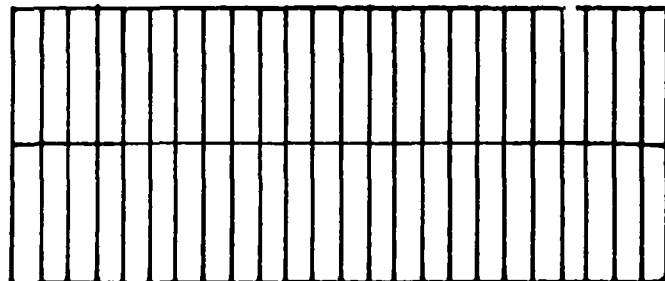
CRAWFORD SLIP METHOD

TOP VIEW OF SLIP
FILE BOX WITH
SMALL BOX GLUED
INSIDE FOR STOPS

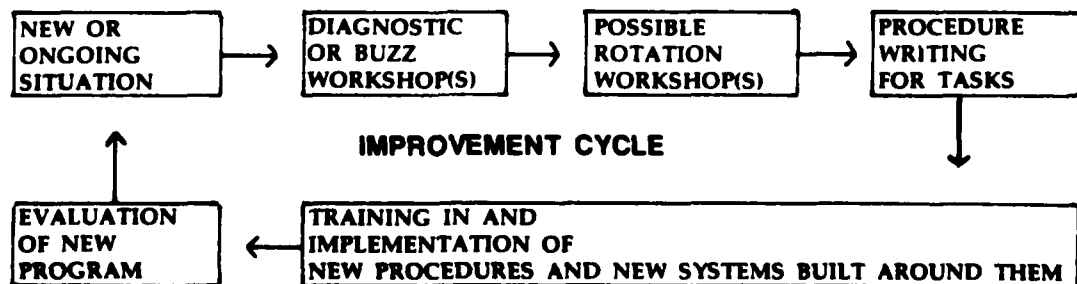


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